THE FAUNA OF BRITISH INDIA,

INCLUDING

CEYLON AND BURMA.

Published under the authority of the Secretary of State for India in Council.

EDITED BY W. T. BLANFORD.

MOTHS.—Vol. II.

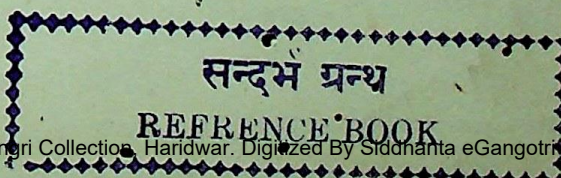
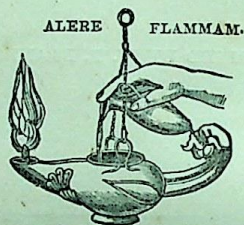
BY

G. F. HAMPSON.

LONDON:
TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET.

CALCUTTA: THACKER, SPINK, & CO. | BOMBAY: THACKER & CO., LIMITED.

BERLIN: R. FRIEDLÄNDER & SOHN, 11 CARLSTRASSE.

1894.

PREFACE.

The three families dealt with in the present volume, the *Arctiidæ, Agaristidæ,* and *Noctuidæ,* are very closely allied and in some cases difficult to discriminate. The *Arctiidæ* may be distinguished from the *Noctuidæ* by vein 8 of the hind wing anastomosing with vein 7 to the middle of the cell, though a few of the lower forms of the *Noctuidæ* have a similar structure, especially in the *Sarrothripinæ,* which are closely allied to the *Nolinæ,* the lowest subfamily of the *Arctiidæ,* and almost grade into them.

The *Noctuidæ* are a large family of Moths dominant at the present day, and consist of several subfamilies and a very large number of genera and species with such slight diversities of structure and pattern as to make a satisfactory classification of them far more difficult than of any other family. The lowest forms are those of which the larvæ have four pairs of abdominal prolegs, and the perfect insects have vein 5 of the hind wing fully developed and from the centre of the disco-cellulars—this ancestral form being only found in some *Deltoidinæ* and *Sarrothripinæ.*

From this type has developed, firstly the subfamilies with vein 5 of the hind wing fully formed: (1) *Deltoidinæ,* (2) *Focillinæ,* (3) *Quadrifinæ,* (4) *Gonopterinæ,* (5) *Stictopterinæ,* (6) *Euteliinæ,* (7) *Sarrothripinæ,* (8) *Palindiinæ*; secondly, the subfamilies which have vein 5 of the hind wing obsolescent: (1) *Acontiinæ,* (2) *Trifinæ.*

The other family, the *Agaristidæ,* is a modification of the *Noctuidæ,* with the antennæ more or less dilated towards the extremity, and consists of a few genera with gaily coloured species of diurnal or crepuscular habits.

In this volume, as in the first, Cotes and Swinhoe's Catalogue has been of the greatest service, and has saved all the time and trouble that would, without its help, have been expended on a preliminary search for references. Every reference quoted in the present work has been verified by the Editor from the original publication, a severe test to apply to a book containing so large a synonymy as Cotes and Swinhoe's.

No attempt has been made in this or in the preceding volume to decide finally whether many of the forms described are entitled to rank as species, varieties, geographical or seasonal forms. Much more study of structure, and especially of the claspers of the male insect, will be needed before similar questions can be satisfactorily determined. The main object of the present work is to enable students to identify and classify the various forms, and thus to establish a workable basis for further enquiry as to their relations to each other. With this end in view, the plan adopted has been to unite under one specific heading those forms having close affinities in pattern and colour, merely noting their differences, whilst forms having a more remote relationship receive comparative, and those still more distantly related non-comparative, descriptions. In the same way groups of forms nearly allied in structure constitute sections of genera, others more remotely related form genera, subfamilies, &c.

Two subfamilies of *Noctuidæ*, the *Focillinæ* and *Deltoidinæ*, are not included in this volume, but will be placed at the commencement of the next, which will also contain the families *Epicopiidæ*, *Uraniidæ*, *Epiplemidæ*, and *Geometridæ*. A considerable portion of the next or third volume is ready for printing, and the whole will, it is hoped, be concluded in the course of the year.

G. F. HAMPSON.

January 22nd, 1894.

SYSTEMATIC INDEX.

Family ARCTIIDÆ.

A family of moths mostly of nocturnal or crepuscular habits and with narrow elongate fore wings, or in some genera with short broad wings; whilst *Nyctemera* and its allies are diurnal and

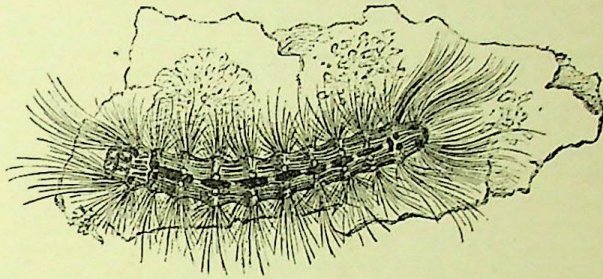



Fig. 1.—Larva of *Philagria entella*. $\frac{1}{1}$. (From Hmpsn. Ill. Het. ix, pl. 175, fig. 8.)

have ample wings. Palpi usually short and porrect. Frenulum present. Fore wing with vein 1 *a* separate from 1 *b*; 1 *c* absent. Hind wing with veins 1 *a* and 1 *b* present; 1 *c* absent; vein 8 arising from 7 generally at or beyond the middle of the cell.

Larva with all the prolegs present, clothed with hairs, and forming a cocoon.

Key to the Subfamilies.

a. Thorax and abdomen stoutly built .... 1. *Arctiinæ*.
b. Thorax and abdomen slender.
  a'. Fore wing without tufts or lines of raised scales.
    a''. Fore wing not produced at apex ...... 2. *Lithosiinæ*.
    b''. Fore wing slightly produced at apex .. 3. *Nycteolinæ*.
  b'. Fore wing with tufts or lines of raised scales .... 4. *Nolinæ*.

Subfamily ARCTIINÆ.

A thickly-built section of the *Arctiidæ* comprising the "Ermine" and "Tiger" moths and their allies. Proboscis often absent or very minute. The retinaculum of the male consists of a strong bar from the costal nervure of fore wing instead of the usual tuft of hair, and by this character those species which approach the *Noctuidæ* in the structure of vein 8 of the hind wing can be discriminated. The legs are usually smooth and the spurs minute.

Larva with five pairs of prolegs and clothed with very long hair, which it spins into the cocoon.

Key to the Genera.

- *a*. Fore wing with veins 7, 8, 9, 10 stalked.
  - *a*′. Fore wing with vein 11 quite separate from 10.
    - *a*². Hind wing with veins 3 and 4 from cell.
      - *a*³. Hind wing with veins 6 and 7 from cell.
        - *a*⁴. Hind tibiæ with two pairs of spurs.
          - *a*⁵. Fore wing rather long and narrow.
            - *a*⁶. Palpi extending slightly beyond the frons.
              - *a*⁷. Wings covered with well-formed scales.
                - *a*⁸. Fore wing with the outer margin somewhat erect .... 1. SPILOSOMA, p. 3.
                - *b*⁸. Fore wing with the outer margin obliquely rounded .... 6. ALPHÆA, p. 20.
              - *b*⁷. Wings clothed with hair-like scales and slightly diaphanous .... 2. THYRGORINA, p. 11.
            - *b*⁶. Palpi not extending beyond the frons.
              - *a*⁷. Head clothed with long hair .... 4. OCNOGYNA, p. 18.
              - *b*⁷. Head smoothly scaled .. 5. PANGORA, p. 19.
            - *c*⁶. Palpi extending far beyond the frons .... 7. AREAS, p. 24.
          - *b*⁵. Fore wing short and broad .. 3. ARCTIA, p. 15.
        - *b*⁴. Hind tibiæ with one pair of spurs.
          - *a*⁵. Palpi extending beyond the frons .... 8. CREATONOTUS, p. 26.
          - *b*⁵. Palpi extremely minute .... 9. PHISSAMA, p. 29.
      - *b*³. Hind wing with veins 6 and 7 stalked.
        - *a*⁴. Hind wing with the inner margin nearly straight.............. 10. NICÆA, p. 30.
        - *b*⁴. Hind wing with the inner margin very short and rounded ...... 12. CAMPTOLOMA, p. 31.
    - *b*². Hind wing with veins 3 and 4 stalked. 11. LEUCOPARDUS, p. 31.
  - *b*′. Fore wing with vein 11 almost or quite touching 10.
    - *a*². Hind wing with veins 6 and 7 from cell .... 13. MOOREA, p. 32.
    - *b*². Hind wing with veins 6 and 7 stalked. 14. CALPENIA, p. 33.
- *b*. Fore wing with vein 9 arising from 10 and anastomosing with 8 to form an areole . 15. CALLIMORPHA, p. 34.
- *c*. Fore wing with vein 10 arising from the cell.
  - *a*′. Fore wing broad and ample.......... 16. AXIOPŒNA, p. 37.
  - *b*′. Fore wing narrow .... 17. PELOCHYTA, p. 38

Genus SPILOSOMA.

Spilosoma, *Steph. Ill. Brit. Ent., Haust.* ii, p. 74 (1829).
Alpenus, *Wlk. Cat.* iii, p. 686 (1855).
Spilarctia, *Butl. Cist. Ent.* ii, p. 39 (1875).
Challa, *Moore, P. Z. S.* 1879, p. 398.

Type, *S. lubricipedum*, Linn., from Europe.
Range. Nearctic, Palæarctic, and Oriental regions.
Palpi short, porrect, and fringed with hair. Antennæ bipectinate in male, serrate in female. Mid tibiæ with a terminal pair of minute spurs; hind tibiæ with two pairs. Fore wing rather long and narrow; veins 3, 4, 5 from angle of cell; 6 from upper angle; 7, 8, 9, 10 stalked. Hind wing with veins 3, 4, 5 from angle of cell; 6 and 7 from upper angle; 8 from middle of cell. Female with an abdominal tuft sometimes developed.

A. *Abdomen yellow in both sexes.*

1159. **Spilosoma multiguttatum,** *Wlk. Cat.* iii, p. 657; *Butl. Ill. Het.* vii, pl. 138, fig. 9 (larva); *C. & S.* no. 825.
Deiopeia spilosomoides, *Wlk. Cat.* xxxi, p. 263; *Butl. Ill. Het.* v, pl. 85, fig. 7; *C. & S.* no. 826.
Deiopeia pardalina, *Wlk. Cat.* xxxi, p. 263; *C. & S.* no. 747.

♂. Head and thorax yellowish white, the collar, tegulæ, and thorax spotted with black; abdomen yellow, with dorsal and lateral series of black spots. Fore wing white, with numerous black spots forming eight ill-defined series. Hind wing yellow, with an obsolescent series of submarginal black spots; some specimens with some apical spots.

♀. The spots of the thorax and fore wing larger; hind wing with an antemedial maculate band showing through from the underside, a large spot at end of cell; some very irregularly placed spots on the postmedial area and also on the outer margin below the apex; a bifid spot at anal angle.

Larva pale green blotched and streaked with white, with sparse black and white hairs; a dorsal series of tufts of brown hair on a broad band of black specks.

Hab. Kulu; Nepal; Sikhim. *Exp.*, ♂ 40, ♀ 60 millim.

1160. **Spilosoma sangaicum,** *Wlk. Cat.* xxxi, p. 294; *C. & S.* no. 759 A.

Head and thorax pure white; abdomen with the basal and terminal segments white; the medial segments orange-yellow, with dorsal, lateral, and ventral series of black spots. Wings pure white; fore wing sparsely spotted with black or quite unmarked. Femora of fore legs yellow.

Hab. Japan; China; Murree. *Exp.*, ♂ 38, ♀ 46 millim.

1161. Spilosoma subfascia, *Wlk. Cat.* iii, p. 678; *Moore, Lep. Ceyl.* ii, pl. 107, figs. 3, 3 *a*; *C. & S.* no. 846.

♂. Head and thorax pale buff; palpi black; tegulæ each with a black spot; abdomen orange, with dorsal and lateral series of black spots. Legs black, fringed with pale hairs. Fore wing pale buff, with a black spot at base, three on costa, one in cell, and a speck at its upper angle; an oblique series of spots from the apex to middle of inner margin; two spots on the outer margin below the apex. Hind wing paler; the inner area clothed with orange scales; some conjoined black spots towards anal angle and some at apex.

♀ with the oblique band of spots of the fore wing almost absent and also those on outer margin below the apex. Hind wing without orange hairs on the inner area; all the spots obsolete except two near anal angle. Abdomen with a large ochreous anal tuft.

Hab. Ceylon. *Exp.*, ♂ 44, ♀ 60 millim.

1162. Spilosoma dalbergiæ, *Moore, P. Z. S.* 1888, p 394; *Butl. Ill. Het.* vii, p. 28, pl. 122, fig. 2; *C. & S.* no. 830 A.

Differs from *subfascia* in the coxa and femur of each fore leg being crimson; tegulæ without black spots; thorax with a black stripe on vertex. Fore wing fleshy buff, without the black spots on the costa and in the cell; the oblique band consisting of paired specks on each side of the veins from the lower angle of cell to inner margin; a submarginal series of specks on each side of the veins from apex to vein 3. Hind wing pale, with a black spot at end of cell and one submarginal spot towards apex and four towards anal angle.

Hab. Kángra; Sikhim; Khásis; Nágas. *Exp.* 48–52 millim.

1163. Spilosoma punctatum, *Moore, Cat. E. I. Co.* p. 355; *C. & S.* no. 758.

Spilarctia uniformis, *Moore, Lep. Atk.* p. 39; *C. & S.* no. 849.

Differs from *subfascia* in not having the black spots on the tegulæ; underside of fore wing with the oblique band forking towards the costa in specimens which have the markings well developed.

Hab. Sikhim; Nágas; Burma; Java. *Exp.*, ♂ 32, ♀ 48 millim.

1164. Spilosoma dentilinea, *Moore, P. Z. S.* 1872, p. 573; *C. & S.* no. 831.

♂. Differs from *punctatum* in having a short black streak on vertex of thorax. Femora crimson. Fore wing white, with a black speck at base; an antemedial angulated series of spots; two at end of cell; a curved postmedial series; a submarginal series

forming dentate marks towards costa and not reaching outer angle. Hind wing slightly suffused with crimson; a black spot at end of cell and slight submarginal specks.

Hab. Sikhim. *Exp.* 42 millim.

1165. **Spilosoma stigmata,** *Moore, P. Z. S.* 1865, p. 809; *C. & S.* no. 845.

♂. Differs from *dalbergiæ* in having the fore femora orange; the frons black; the dorsal spots of abdomen often almost obsolete. Fore wing yellowish buff; a subbasal series of spots, the one in the cell elongate (this series may, however, be almost obsolete);

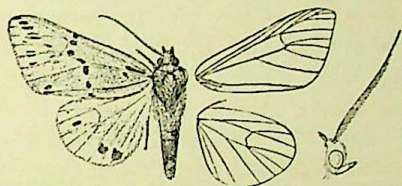



Fig. 2.—*Spilosoma stigmata,* ♂. $\frac{1}{1}$.

a medial series of single spots angled at lower extremity of cell; the submarginal double specks more prominent. Hind wing without the spot at end of cell. The abdomen is sometimes more or less tinged with crimson above.

Hab. Sikhim; Nágas. *Exp.* 42–46 millim.

1166. **Spilosoma mona,** *Swinh. P. Z. S.* 1885, p. 295, pl. 20, figs. 3, 4; *C. & S.* no. 757.

♀. Differs from *dalbergiæ* in having the coxæ and femora of each pair of legs striped with crimson; vertex of thorax without the dark stripe. Fore wing with a spot at base; antemedial and postmedial maculate bands, the latter excurved beyond the end of cell; a submarginal series of specks on each side of the veins from costa to vein 3. Hind wing with a spot at end of cell; a postmedial band of small spots and submarginal series of large ones. Underside strongly marked with black showing through to the upperside. The spots on fore and hind wing may be much reduced; whilst one specimen has the whole cell of the hind wing filled in with black.

Hab. Mahableshwar. *Exp.* 48–52 millim.

1167. **Spilosoma gopara,** *Moore, Cat. E. I. Co.* p. 356, pl. 9 *a*, fig. 11; *C. & S.* no. 835.

♀. Head and thorax buff without markings; abdomen orange, with dorsal and lateral series of black spots. Fore wing buff, with a black spot at base; the antemedial series represented by a spot

on costa and two above inner margin; a spot at upper angle of cell; a postmedial series of specks on each side of the veins, obsolete beyond the end of cell; a submarginal series of double specks. Hind wing orange-yellow, the cell and inner area more or less suffused with black; a submarginal series of spots, those towards anal angle largest.

Hab. Sikhim. *Exp.* 58 millim.

1168. **Spilosoma ummera,** *Swinh. P. Z. S.* 1889, p. 405, pl. 43, fig. 1.

♀. Bright buff; thorax with a black spot just behind the collar; abdomen pale orange, with dorsal and lateral series of small black spots. Fore wing with a spot at base; traces of submarginal specks on each side of the veins. Hind wing yellow, with a spot at end of cell and two towards anal angle.

Hab. Bassein, Burma. *Exp.* 40 millim.

1169. **Spilosoma bimaculatum,** *Moore, P. Z. S.* 1879, p. 398; *C. & S.* no. 854.

Challa quadrimaculata, *Moore, P. Z. S.* 1888, p. 395; *Butl. Ill. Het.* vii. pl. 122, fig. 9; *C. & S.* no. 855 A.

♂. Head, thorax, and abdomen bright ochreous, the last with indistinct black lateral specks. Wings bright ochreous; fore wing with a black spot at upper angle of cell; hind wing in the form *quadrimaculatum* with a fuscous spot at upper angle of cell.

Hab. Pálampur, Punjab. *Exp.* 30–36 millim.

1170. **Spilosoma jucundum,** *Butl. Ill. Het.* v, p. 32, pl. 85, fig. 11; *C. & S.* no. 838.

♂. Head and thorax pale buff; abdomen ochreous, white at base and extremity; a lateral series of black spots. Fore wing pale buff; a series of black specks from the costa beyond the middle, joined at vein 5 by a series of paired streaks from the apex on each side of the veins and thence continued as a band to centre of inner margin. Hind wing white.

Hab. Sikhim. *Exp.* 44 millim.

1171. **Spilosoma flavale,** *Moore, P. Z. S.* 1865, p. 809; *C. & S.* no. 834.

Head, thorax, and abdomen bright orange, the last with dorsal and lateral series of spots (in some specimens the dorsal series is wanting). Fore wing bright orange; in some specimens unmarked, others with a complete series of grey spots from the apex to centre of inner margin, and an incomplete series outside them, or any intermediate stage may exist. Hind wing white, with a dark speck at end of cell and a more or less incomplete submarginal series of spots.

Hab. Sikhim. *Exp.* 42 millim.

B. *Abdomen of male crimson, of female orange.*

1172. **Spilosoma todarum,** *Moore, P. Z. S.* 1872, p. 574; *C. & S.* no. 848.

♂. Head and thorax brownish buff or brown; palpi and antennæ black, the latter with the shaft tipped with white; abdomen clothed with pale crimson hair; dorsal and lateral series of small black spots. Fore wing brownish buff or brown, a black spot at base; the antemedial series represented by a spot on the costa and speck above vein 1; a speck at upper angle of cell; a postmedial slightly curved fuscous band with a more or less complete series of double specks on each side of the veins; a similar submarginal series from the costa to vein 3. Hind wing yellowish or brownish buff, the inner area clothed with crimson hair; a black spot at upper angle of cell. Fore and hind femora crimson.

♀. Head, thorax, and fore wing whitish buff, the last with the markings mostly obsolete; abdomen orange, the anal tuft pale. Hind wing yellowish white, without crimson hairs on inner area. Some specimens have a prominent black maculate submarginal band on underside of both wings, showing through on the upperside.

Hab. Nilgiri plateau. *Exp.*, ♂ 50, ♀ 60 millim.

C. *Abdomen crimson in both sexes.*

a. *Male with branches of antennæ long.*

1173. **Spilosoma montanum,** *Guér. Voy. Deless.* p. 92, pl. 26, fig. 3; *C. & S.* no. 783.
Spilosoma suffusa, *Wlk. Cat.* iii, p. 677; *C. & S.* no. 847.

Differs from *todarum* in the palpi having the basal joint crimson; the shaft of antennæ not tipped with white; thorax with a blackish stripe on vertex; abdomen with the dorsal and lateral series of spots prominent. Fore wing yellowish brown; in one specimen suffused with crimson; the antemedial series only represented by a spot above vein 2; the postmedial band much more excurved, the spots composing it often conjoined; an indistinct maculate band between it and the submarginal band. Hind wing crimson or buff; a more or less complete submarginal series of spots, and spot at end of cell.

♀. Browner, with the black markings of both wings more prominent.

Hab. Punjab; Nilgiri plateau. *Exp.*, ♂ 46, ♀ 54 millim.

1174. **Spilosoma strigatulum,** *Wlk. Cat.* iii, p. 613; *Moore, Lep. E. I. Co* pl. 16, fig. 11 (larva).
Spilosoma rubescens, *Wlk. Cat.* iii. p. 677; *C. & S.* no. 759.

Antennæ almost white; head and thorax ochreous; palpi black; femora crimson; abdomen crimson, with dorsal and lateral series

of black spots. Fore wing brownish or reddish ochreous, with a basal black speck; an antemedial series of specks; postmedial and submarginal series of double specks; a marginal series. Hind wing crimson, with a spot at end of cell and a submarginal series of spots which often coalesce into a complete band.

In the female the markings of the fore wing may be totally obsolete.

Larva back, with tufts of pale ferruginous hair, the lateral tufts long.

Hab. Moulmein; Penang; Java; Borneo. *Exp.*, ♂ 42, ♀ 52 millim.

b. *Male with branches of antennæ short.*

1175. **Spilosoma castaneum,** *Hmpsn. Ill. Het.* ix, p. 79, pl. 158, figs. 26, 27.

♂. Head and thorax brown; the basal joint of palpi, the femora, and the pectus crimson. Abdomen crimson above and below; the dorsal and lateral series of spots small. Fore wing brown, with the basal spot, the antemedial series, the spot at end of cell, and those on costa above it well developed; the postmedial series taking the form of large, extremely irregular blotches; cilia black. Hind wing uniform black.

♀. Head and fore wing red-brown; the last with a black spot at base; a pair of antemedial spots on each side of vein 1; a postmedial curved series from vein 4 to inner margin; cilia red-brown. Hind wing crimson, with a black spot at end of cell and submarginal series of large spots.

Hab. Ceylon. *Exp.*, ♂ 40, ♀ 50 millim.

1176. **Spilosoma rubilinea,** *Moore, P. Z. S.* 1865, p. 810; *C. & S.* no. 842.

Spilosoma discinigra, *Moore, P. Z. S.* 1865, p. 810; *C. & S.* no. 832.

Differs from *montanum* in the thorax having a black spot on vertex. Fore wing yellowish brown, with the black spots obsolete; the bands indistinct and with a crimson tinge; the antemedial band highly angulate; the postmedial band not so much excurved. Hind wing yellowish brown; the inner area slightly tinged with crimson; a black spot at end of cell and postmedial curved black band.

In the form *discinigra* the base of the hind wing is suffused with black; one specimen has the wings wholly suffused with fuscous.

Hab. Sikhim; Shillong; Burma. *Exp.*, ♂ 50, ♀ 56 millim.

1177. **Spilosoma erythrophleps,** n. sp.

♂. Head, thorax, and abdomen reddish orange; palpi and frons black; collar and tegulæ with paired black spots; abdomen with dorsal black bands and patch on terminal segment. Fore wing

orange, the veins scarlet; numerous black spots in the interspaces; a black streak from base through the cell to near outer margin. Hind wing pale ochreous; medial and postmedial maculate black bands conjoined into a large patch in cell; a marginal series of spots with one inside it on vein 5.

Hab. Nága Hills, 6000 feet (*Doherty*). *Exp.* 52 millim.

*1178. **Spilosoma brunneum**, *Moore, P. Z. S.* 1872, p. 574; *C. & S.* no. 828.

♀. Head and thorax pale reddish brown; abdomen crimson, with dorsal and lateral series of spots. Fore wing pale red-brown, with a black speck at base below the costa; an antemedial series of spots; a spot at end of cell; a postmedial band angled beyond end of cell; a submarginal series of spots double in places. Hind wing uniform pale red-brown.

Hab. Bombay. *Exp.* 48 millim.

1179. **Spilosoma casignetum**, *Koll. Hüg. Kasch.* iv, p. 469; *C. & S.* no. 829.

Spilarctia confusa, *Butl. Cist. Ent.* ii, p. 42; *id. Ill. Het.* v. pl. 85, fig. 13; *C. & S.* no. 830.
Spilarctia howqua, *Butl. Ill. Het.* vii, p. 28, pl. 122, fig. 3.
Spilarctia nydia, *Butl. Cist. Ent.* ii, p. 41; *id. Ill. Het.* v, p. 32, pl. 85, fig. 12; *C. & S.* no. 840.
Spilarctia sagittifera, *Moore, P. Z. S.* 1888, p. 394; *C. & S.* no. 843 A.
Spilarctia howra, *Moore, Lep. Atk.* p. 40; *C. & S.* no 836.
Spilosoma sanguinalis, *Moore, P. Z. S.* 1865, p. 810; *C. & S.* no. 760.

Head, thorax, and fore wing ochreous; the dorsal spots on abdomen often obsolete. Fore wing ochreous with an antemedial series of specks, any or all of which may be absent; postmedial and submarginal series of double specks on each side of the veins, but often almost obsolete, the postmedial series curved. Hind wing ochreous, often more or less suffused with crimson; a spot at end of cell and submarginal series of spots, which are often absent except those towards anal angle.

The form *confusum* is whitish or pinkish ochreous, with the markings slightly developed; in a female from Sikhim which apparently belongs to this form the abdomen is orange. *Howqua* has the postmedial spot of the fore wing and submarginal series of hind wing prominent. A male from Dalhousie has the head and thorax black.

Hab. Himalayas, from Kángra to Sikhim; Assam; Nágas; Manipur; Calcutta; Bombay; Nilgiris; Burma. *Exp.* 40–46 millim.

1180. **Spilosoma bifasciatum**, *Hmpsn. Ill. Het.* viii, p. 55, pl. 140, fig. 21.

♂. Head and thorax dirty white; abdomen with the dorsal and

lateral spots prominent. Fore wing dirty white, with the spots at base and end of cell and the ante- and postmedial series prominent, the last slightly curved; the submarginal series obsolescent. Hind wing wholly suffused with crimson; the spot at end of cell large; traces of some submarginal spots. Underside with the basal area and cell of fore wing suffused with black and with two postmedial bands.

Hab. Nilgiris. *Exp.* 46 millim.

1181. **Spilosoma comma,** *Wlk. Cat.* vii, p. 1703; *C. & S.* no. 814.
Spilosoma abdominalis, *Moore, Cat. E. I. Co.* p. 356; *Butl. Ill. Het.* v, pl. 85, fig. 9; *C. & S.* no. 827.

♂. Head and thorax yellowish white; palpi crimson, the terminal joint black; pectus with a crimson tinge; a black mark on shoulders; femora crimson; abdomen with the dorsal and lateral spots prominent. Wings yellowish white; fore wing with black ante- and postmedial spots on the costa; an elongate black streak on centre of inner margin sending spurs into the interno-median interspace from each of its extremities.

♀. Fore wing without the postmedial spot on the costa; hind wing with a spot at end of cell.

Hab. N.W. Himalayas. *Exp.*, ♂ 50, ♀ 58 millim.

1182. **Spilosoma lacteatum,** *Butl. Ill. Het.* v, p. 31, pl. 85, fig. 10, and vii, pl. 138, fig. 2 (larva); *C. & S.* no. 839.

♂. Head and thorax pale ochreous; palpi, frons, and pectus black; fore femora crimson; thorax with a black streak on the vertex. Fore wing pale ochreous; a black subbasal spot below the median nervure; a curved band of small spots from the apex to centre of inner margin, the spots on inner margin and between veins 2 and 3 taking the form of long streaks; submarginal double specks from veins 3 to 5. Hind wing white, with a black submarginal spot towards apex and three towards anal angle.

♀ with the abdominal segments fringed with white and a large anal white tuft.

Larva black, with segmental tufts of black and dirty white hairs; the head and a dorsal tuft of hair on anal segment red-brown.

Hab. Dharmsála; Sikhim. *Exp.*, ♂ 52, ♀ 60 millim.

1183. **Spilosoma melanopsis,** *Wlk. Cat.* xxxi, p. 280; *Moore, Lep. Ceyl.* ii, pl. 108, fig. 2; *C. & S.* no. 811.
Aloa callisoma, *Feld. Reis. Nov.* pl. 101, fig. 4.

Head and thorax ochreous; frons black; palpi crimson, black above; paired black spots on the shoulders and tegulæ. Abdomen crimson above, whitish below, with a dorsal and two paired lateral series of black spots; thorax below and femora crimson. Fore wing ochreous; a fuscous oblique band from the costa beyond the

middle to centre of inner margin. Hind wing ochreous; the inner area suffused with crimson. Cilia of both wings white.

Hab. Ceylon. *Exp.*, ♂ 56, ♀ 78 millim.

1184. **Spilosoma rubitinctum**, *Moore, P. Z. S.* 1865, p. 809; *C. & S.* no. 843.

Icambosida punctilinea, *Moore, Lep. Atk.* p. 40; *C. & S.* no. 863.

Head and thorax pale orange; palpi black fringed with crimson; antennæ with the shaft whitish; some crimson on pectus; abdomen crimson, the dorsal and lateral spots small. Fore wing crimson, shading off to orange outwardly; an oblique band from vein 5 to centre of inner margin. Hind wing white; a black spot at end of cell and a submarginal series of two subapical spots and three towards anal angle.

The form *punctilinea* is very pale.

Hab. Sikhim. *Exp.*, ♂ 44, ♀ 56 millim.

1185. **Spilosoma erythrozona**, *Koll. Hüg. Kasch.* iv, p. 468; *C. & S.* no. 833.

Spilosoma cognata, *Wlk. Char. Undescr. Het.* p. 11 (1869).

Head and thorax white; abdomen crimson above with black bands; white below, with two series of black spots. Wings white, some specimens with traces of a spot at end of cell and submarginal spots to both wings.

Hab. N.W. Himalayas; Kashmir. *Exp.*, ♂ 40, ♀ 46 millim.

D. *Abdomen brown; antennæ serrate in male.*

1186. **Spilosoma fuscipenne**, n. sp.

♂. Head, thorax, and abdomen pale reddish brown; abdomen with black dorsal and lateral specks. Fore wing dark fuscous brown, with indistinct ante- and postmedial black lines, the latter slightly angled at lower end of cell. Hind wing pale fuscous. Femora of fore and hind legs crimson on the outside.

Hab. Simla (*Harford*). *Exp.* 48 millim. Type in B. M.

Genus THYRGORINA.

Thyrgorina, *Wlk. Cat.* xxxi, p. 317 (1864).
Echlida, *Wlk. Cat.* xxxii, p. 386 (1865).
Icambosida, *Wlk. Cat.* xxxii, p. 400.
Andala, *Wlk. Cat.* iii, p. 774 (1855), præocc.
Carbisa, *Moore, Lep. Atk.* p. 41 (1879).

Type, *T. indica*, Guen.

Range. Himalayas; Bombay; Nilgiris; Burma.

Palpi short, porrect, and hairy. Antennæ of male with the branches longer than in typical *Spilosoma*; thorax and abdomen of slighter build; mid tibiæ with one pair of spurs, hind tibiæ

with two pairs. Wings sparsely covered with hair-like scales and slightly diaphanous; the venation as in *Spilosoma*; fore wing rather long and narrow. Female with an abdominal tuft.

A. *Abdomen yellow above.*

1187. **Thyrgorina indica,** *Guér. Voy. Deless.* p. 93; *C. & S.* no. 837.
Thyrgorina spilosomata, *Wlk. Cat.* xxxi, p. 318; *C. & S.* no. 770.
Echlida subjecta, *Wlk. Cat.* xxxii, p. 387; *C. & S.* no. 1070.

Head and thorax white; palpi black; frons and shoulders pale yellow; abdomen yellow, with dorsal and lateral series of black spots. Wings white, in some specimens with a creamy tinge. Fore wing with the basal half of costa black; traces of a subbasal series of spots; a medial curved series and postmedial series angled outwards at lower end of cell; a submarginal series. Hind wing with a spot at end of cell and submarginal series of black spots, those towards anal angle large.

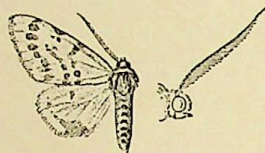



Fig. 3.
Thyrgorina indica, ♂. 1/1.

Some specimens have entirely lost the markings on the wings, all the intergrades between them and the well-marked forms being found.

Hab. Bombay; Nilgiris. *Exp.*, ♂ 32, ♀ 42 millim.

1188. **Thyrgorina multivittata,** *Moore, P. Z. S.* 1865, p. 808; *C. & S.* no. 768.

Differs from *indica* in the first band of the fore wing being antemedial and much more angled; the postmedial band also much more angled and joined by an oblique series of spots from the apex; the submarginal series confined to the area between veins 3 and 5.

As in *indica*, the markings on the wings may be entirely obsolete. In the well-marked males the shoulders are reddish orange and black, the pectus and frons black; whilst in the pale forms the whole shoulder and pectus are yellow, and the palpi fringed with yellow, the frons white. In the female there is no yellow on shoulders or pectus.

Hab. Murree; Punjab; Sikhim; Nágas; Burma. *Exp.*, ♂ 36, ♀ 42 millim.

1189. **Thyrgorina nigrifrons,** *Wlk. Cat.* xxxii, p. 401; *Butl. Ill. Het.* v, pl. 85, fig. 3; *C. & S.* no. 862.

♂. Differs from *multivittata* in the head, thorax, and abdomen being clothed with longer hair; palpi, frons, fore legs, and abdomen below black; collar orange-yellow; abdomen yellow above, the basal and terminal segments white; wings unmarked.

♀. Frons white; a large pale anal tuft.

Hab. Sikhim. *Exp.*, ♂ 38, ♀ 48 millim.

1190. **Thyrgorina unifascia,** *Wlk. Cat.* iii, p. 774; *Butl. Ill. Het.* vii, pl. 138, fig. 11 (larva); *C. & S.* no. 772.
Alphæa varia, *Wlk. Cat.* xxxi, p. 297; *C. & S.* no. 861.

♂. Head and thorax white; palpi black; collar and tegulæ with small black spots; abdomen yellow, with short dorsal bands, a large patch on terminal segment, and lateral series of spots. Fore wing white, with three black spots near the base; an antemedial series of spots; a medial angulated broad black band with irregular edges; indistinct postmedial, submarginal, and marginal series of spots, those on the costa large. Hind wing with a spot at end of cell and a submarginal series.

♀. The abdomen and hind wing smoky white in some specimens.

Larva black, with tufts of white hair; dorsal and paired subdorsal series of segmental white spots.

Hab. Mussooree; Kángra. *Exp.*, ♂ 39, ♀ 50 millim.

1191. **Thyrgorina discalis,** *Moore, P. Z. S.* 1879, p. 399, pl. 32, fig. 7; *C. & S.* no. 855.

♂. Ochreous; abdomen orange, with dorsal and lateral series of black spots. Fore wing with a black spot at end of cell and traces of fuscous spots forming antemedial and medial bands. Hind wing with an indistinct spot at end of cell.

Hab. N.W. Himalayas. *Exp.* 30 millim.

1192. **Thyrgorina obliquivitta,** *Moore, Lep. Atk.* p. 40, pl. 2, fig. 26; *C. & S.* no. 841.

Head and thorax pale ochreous; abdomen orange, with lateral series of black spots. Fore wing pale ochreous, with an oblique series of black conjoined spots from apex to centre of inner margin. Hind wing white.

Hab. Sikhim; Manipur. *Exp.*, ♂ 36, ♀ 54 millim.

1193. **Thyrgorina venosa,** *Moore, Lep. Atk.* p. 41, pl. 11, fig. 10; *C. & S.* no. 864.

♂. Head, thorax, and abdomen ochreous, the last with narrow dorsal black bands or spots. Fore wing brownish ochreous, the veins whitish; cilia ochreous. Hind wing pale ochreous, with a very indistinct submarginal band.

Another specimen has the ground-colour of the wings smoky black, the veins and cilia of fore wing yellow. Another form has the wings wholly black, with a yellow spot on the costa above the end of cell of fore wing.

Hab. Sikhim. *Exp.* 36 millim.

1194. **Thyrgorina flavens,** *Moore, Lep. Atk.* p. 39; *C. & S.* no. 824.

Ochreous; abdomen orange, with dorsal and lateral series of black spots. Fore wing with a wide black medial band of six

spots, the two spots in the cell long and extending to just beyond it; a postmedial band of nine spots excurved round the end of cell; two submarginal spots between veins 4 and 6. Hind wing with a spot at end of cell; a maculate band beyond the cell from the costa to vein 3; a submarginal maculate band interrupted between veins 3 and 4.

Some specimens lose the submarginal spots of fore wing and all the markings of hind wing except the spots near anal angle.

Hab. Sikhim; Khásis. *Exp.* 42 millim.

B. *Abdomen crimson or fiery red above.*

1195. **Thyrgorina biseriata,** *Moore, P. Z. S.* 1877, p. 596; *C. & S.* no. 823.

♀. Head and thorax reddish ochreous; collar fringed with crimson; abdomen crimson, with series of black dorsal and lateral spots. Fore wing reddish ochreous; two black spots at base; a medial band of six spots; two spots at end of cell; a postmedial band of nine spots excurved round end of cell. Hind wing dull crimson; a black spot at end of cell, one near base of inner margin and one at anal angle.

Hab. S. Andaman Island. *Exp.* 38 millim.

1196. **Thyrgorina sordida,** *Moore, P. Z. S.* 1865, p. 808; *C. & S.* no. 844.

♂. Head and thorax pale reddish brown; abdomen crimson, with slight dorsal and lateral series of black spots. Wings pale red-brown: fore wing with traces of antemedial and postmedial curved lines and a mark on discocellulars; hind wing with spots at end of cell and some submarginal spots.

Hab. Sikhim. *Exp.* 36 millim.

1197. **Thyrgorina sikkimensis,** *Moore, Lep. Atk.* p. 39, pl. 2, fig. 12; *C. & S.* no. 809.

♀. Head and thorax pale ochreous brown; abdomen pale crimson, with dorsal and lateral series of black spots; the first segment brown, the terminal segments and anal tuft ochreous. Fore wing ochreous brown, the veins paler, with traces of a medial oblique band. Hind wing fuscous, with an indistinct pale submarginal band.

This may be the female of *T. sordida.*

Hab. Sikhim. *Exp.* 46 millim.

1198. **Thyrgorina eximia,** *Swinh. Trans. Ent. Soc.* 1891, p. 137, pl. viii, fig. 8.

♂. Orange-red; thorax spotted with black. Fore wing with a black spot at base; a curved subbasal band; a broad V-shaped

medial band and submarginal series of spots. Hind wing with a spot at end of cell and a submarginal series of spots, those towards anal angle largest, the middle spot minute.

Hab. Canara. *Exp.* 30 millim.

1199. **Thyrgorina rhodophila,** *Wlk. Cat.* xxxi, p. 294; *Butl. Ill. Het.* v, pl. 85, fig. 4; *C. & S.* no. 769.
Spilosoma rubidorsa, *Moore, P. Z. S.* 1865, p. 808.
Icambosida dorsalis, *Moore, P. Z. S.* 1888, p. 394; *C. & S.* no. 861 A.

♂. Differs from *multivittata* in the shoulder and pectus being crimson; palpi fringed with crimson; abdomen bright crimson. Wings pure white. Fore wing with only the oblique maculate band from the apex to inner margin and the submarginal spots between veins 3 and 5. Hind wing with the spot at end of cell and submarginal series obsolescent.

♀. The basal and terminal segments of abdomen pure white; the medial crimson segments with a prominent dorsal series of black spots.

Larva. Head red-brown; dorsal area dark brown, with a series of white streaks on the vertex; lateral area pale brown, with pale streaks and tufts of long hair arising from yellow papillæ.

Hab. N.W. Himalayas; Sikhim; Nágas; Manipur. *Exp.* 42 millim.

C. *Abdomen black.*

1200. **Thyrgorina melanosoma,** n. sp.

Differs from *indica* in the abdomen being black ringed with white, the basal segment clothed with white hair, the others slightly fringed with white; anal tuft ochreous. Wings with hardly a trace of markings.

Hab. Kulu (*G. Young*); Sikhim (*Möller*); Khásis (*Elwes*). *Exp.* 46 millim. Type in coll. Elwes.

Genus **ARCTIA.**

Arctia, *Schrank, Fauna Boica,* ii, p. 152 (1802).
Euprepia, *Ochs. Eur. Schmett.* iii, p. 299 (1810).
Alope, *Wlk. Cat.* iii, p. 619 (1855).
Gonerda, *Moore, P. Z. S.* 1879, p. 395.

Type, *A. villica,* Linn., from Europe.

Range. N. America; Palæarctic region; Himalayas; throughout India and Ceylon; Assam.

Palpi porrect, reaching beyond the frons, the first two joints fringed with hair. Antennæ bipectinated in male, the branches short, swollen at extremity, and with a terminal bristle, serrate in female. Legs hairy; hind tibiæ with two pairs of spurs. Fore wing rather short and broad. Venation as in *Spilosoma.*

1201. **Arctia suttadra**, *Moore, P. Z. S.* 1879, p. 395; *C. & S.* no. 753.
Arctia cajula, *Staud. Ent. Mo. Mag.* xxii, p. 258.

♂. Head and thorax pale red-brown, slightly marked with scarlet and white; abdomen crimson, with short dorsal black bands and lateral spots. Fore wing red-brown; two white spots

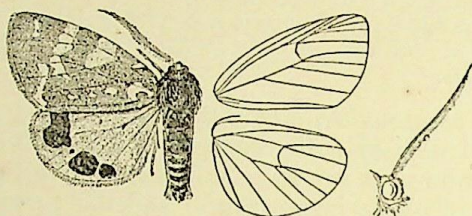



Fig. 4.—*Arctia suttadra*, ♂. 1/1.

on basal part of costa and two in interno-median interspace, the basal mark large and with a brown spot on it; a white bar from the costa to lower angle of cell; a postmedial band from costa to outer angle; two subapical specks. Hind wing scarlet; two antemedial black spots; one at end of cell; a submarginal series of conjoined black blotches; black streaks at apex and middle of outer margin.

The markings of the fore wing may be well developed or much reduced.

♀ with white streaks on thorax.

A variety has the hind wing yellow.

Hab. N.W. Himalayas. *Exp.*, ♂ 44, ♀ 48 millim.

1202. **Arctia orientalis**, *Moore, A. M. N. H.* (5) i, 1878, p. 230; *C. & S.* no. 751.

♂. Head and thorax rufous: palpi fringed with scarlet; abdomen scarlet, with short dorsal black bands. Fore wing rufous; the basal area white, sending a spur outwards in the interno-median interspace, and with rufous spots on the costa and inner margin; short white bands from the costa to median nervure at middle and towards end of cell; a postmedial band conjoined at middle to a doubly-angled submarginal band. Hind wing scarlet; a large black spot on median nervure at middle of cell, with a small spot below it on vein 1; three submarginal spots; all these with deep blue centres; cilia yellowish white. Underside with a broad black medial band to both wings.

Closely allied to *A. caja*, Linn.

Hab. N.W. Himalayas; Khásis; Sibságar. *Exp.* 66 millim.

1203. **Arctia perornata**, *Moore, P. Z. S.* 1879, p. 395, pl. 32, fig. 2; *C. & S.* no. 755.

♂. Head and thorax ochreous; head black at sides and below;

thorax with three black-brown stripes; abdomen crimson, with some brown on the vertex of basal segments, lateral crimson tufts and anal dark tuft with two small crimson tufts; femora striped with crimson. Fore wing ochreous; some short black basal streaks; antemedial, medial, postmedial, and submarginal angulated black bands; a patch on discocellulars and marginal band. Hind wing crimson; a broad antemedial black band; a large patch at end of cell, with a narrow curved band from it to inner margin; a submarginal band broken towards anal angle; a marginal line. Cilia of both wings ochreous.

♀. Some specimens have the abdomen crimson, with black spots on vertex and lateral bands; the bands of both wings much reduced in width, those of the fore wing highly angulated; the marginal line of hind wing absent.

In others the head and abdomen are black, the latter ringed with crimson; fore wing with the bands very broad, the antemedial and medial bands conjoined; hind wing with the basal area black, the bands broad, the marginal line present.

Hab. Kashmir. *Exp.* 41–48 millim.

*1204. **Arctia? tibetica**, *Feld. Reis. Nov.* pl. 101, fig. 12; *C. & S.* no. 754.

Head and thorax red-brown; collar crimson; abdomen dark red-brown, with the sides crimson and extremity ochreous. Fore wing red-brown, the basal area darkest; a yellow streak from the base below median nervure. Hind wing crimson; the basal and costal areas black; a streak along base of inner margin; black streaks along veins 1 and 2 to the submarginal series of blotches; a spot at centre of cell and another at middle of outer margin.

Hab. Ladák. *Exp.* 28 millim.

*1205. **Arctia? parvula**, *Feld. Reis. Nov.* pl. 100, fig. 24; *C. & S.* no. 752.

♂. Head crimson; thorax and abdomen pale brown, the latter with white segmental rings. Fore wing pale brown, with a black mark at base extending along inner margin to middle; basal two-thirds of costa pink; a black spot at end of cell; an obsolescent curved postmedial band. Hind wing crimson, the base black, a fascia extending from it to a submarginal band with waved edges; a black spot at end of cell. Cilia of both wings pink.

Hab. "Himalayas." *Exp.* 28 millim.

1206. **Arctia ricini**, *Fabr. Syst. Ent.* p. 583; *Moore, Lep. Ceyl.* ii, pl. 106, figs. 2, 2 *a, b* (larva); *C. & S.* no. 780.
Phalæna zerah, *Cram. Pap. Exot.* iv, pl. 397, fig. G.
Alope ocellifera, *Wlk. Cat.* iii, p. 620.
Alope clavatus, *Swinh. P. Z. S.* 1885, p. 295; *C. & S* no. 778.

Head and thorax dark grey-brown; collar fringed with crimson

and with a pair of pale-ringed black spots; tegulæ with two pairs and vertex of thorax with one similar spot; abdomen crimson, with a series of short dorsal black bands and lateral spots. Fore wing fuscous brown, with very numerous pale-ringed black spots in the interspaces. Hind wing crimson, with antemedial, medial, postmedial, and marginal bands and more or less conjoined blotches.

The variety *clavatus* has the hind wing orange, whilst in *zerah* it is yellow.

Larva dark brown speckled with white, and with dorsal and ateral tufts of long dark hair.

Hab. Throughout India and Ceylon. *Exp.*, ♂ 38–50, ♀ 60–68 millim.

1207. **Arctia transversa,** *Moore, P. Z. S.* 1879, p. 398; *C. & S.* no. 853.

♂. Pale brown; thorax spotted with black. Fore wing with two black spots below base of costa; an antemedial angulated series of spots; a medial angulated band broken at middle; a postmedial maculate band; a submarginal series, the spots from veins 2 to 6 almost obsolete; a marginal series. Hind wing pale brown, with a spot at end of cell and submarginal series. (Head and abdomen of type wanting.)

Hab. "N.W. India." *Exp.* 38 millim.

Genus OCNOGYNA.

Ocnogyna, *Rambur, Lép. And.* p. 255 (1858).

Type, *O. hemigena*, Grasl., from Europe.

Range. Europe; Kashmir.

Differs from *Arctia* in the head being clothed with long hair; the palpi extremely minute and buried in hair.

Female with the wings aborted.

1208. **Ocnogyna postflavida,** n. sp.

♂. Head, thorax, and abdomen black grizzled with white; abdomen fringed with yellow hair towards extremity. Fore wing very dark red-brown, with an indistinct subbasal oblique whitish line joining a curved medial obsolescent band on vein 1; a postmedial curved band joined at middle to a dentate submarginal line. Hind wing orange irrorated with dark scales, the inner area blackish; a broad marginal black band interrupted by a streak

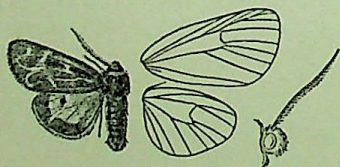



Fig. 5.
Ocnogyna postflavida, ♂. ½.

from the orange area to centre of margin; a black patch at end of cell. Cilia yellow.

Hab. Skoro La, Kashmir (*Leech*). *Exp.* 28 millim. Type in coll. Leech.

Genus PANGORA.

Pangora, *Moore, Lep. Atk.* p. 42 (1879).

Type, *P. distorta*, Moore.

Range. N.W. Himalayas; Bombay and Malabar; Ceylon.

Palpi not projecting beyond the frons. Antennæ almost simple in both sexes. Hind tibiæ with two pairs of spurs. Fore wing rather long and narrow. Venation as in *Spilosoma.*

1209. **Pangora erosa,** *Wlk. Cat.* iii, p. 708; *Moore, Lep. Ceyl.* ii, pl. 107, figs. 1, 1 *a, b* (larva); *C. & S.* no. 776.

♂. Palpi crimson, with the third joint black; head white, with a black spot on vertex; collar and tegulæ white, with pairs of black spots; thorax brown, with white stripes near the tegulæ; abdomen crimson above, with a dorsal series of brown spots. Legs striped with crimson. Fore wing brown, with a highly irregular white fascia from the base, joining a nearly straight medial band sometimes interrupted above median nervure, and with a brown subbasal spot on it below median nervure; two subapical spots and one submarginal above vein 3. Hind wing crimson, with three large irregular submarginal brown blotches and some small spots on the margin below apex.

♀ with the submarginal spots on fore wing small; hind wing with medial brown spots at origin of vein 2 and on vein 1, and the submarginal spots conjoined into a broad band.

Larva. Dark brown; clothed with dense tufts of blackish hair.

Hab. Nilgiris, S. slopes; Ceylon. *Exp.* 60 millim.

1210. **Pangora distorta,** *Moore, Lep. Atk.* p. 42, pl. ii, fig. 14; *C. & S.* no. 775.

♂. Differs from *erosa* in the spots on the thorax being large, two spots taking the place of the stripe on vertex. Fore wing with the basal irregular patch separate from the medial band, which is very irregular; the subapical and submarginal spots large. Hind wing crimson, with a double black spot at upper angle of cell; a submarginal series of three patches decreasing in size towards anal angle.

Hab. Mussooree; Simla. *Exp.* 64 millim.

1211. **Pangora rubelliana,** *Swinh. P. Z. S.* 1889, p. 403.

♂. Differs from *erosa* in the fore wing having the subbasal white patch large, with two spots on it, and separated from the

medial band, which is broken up into two highly-irregular patches; the submarginal spots five in number.

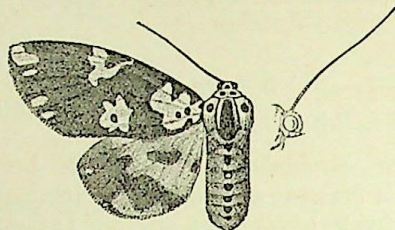



Fig. 6.—*Pangora rubelliana*, ♀. 1/1.

♀ with a nearly complete medial band to hind wing.
Hab. Canara; Nilgiris, W. slopes. *Exp.*, ♂ 50, ♀ 58 millim.

1212. **Pangora matherana**, *Moore, P. Z. S.* 1879, p. 396; *Waterh. Aid*, ii, pl. 131, fig. 6; *C. & S.* no. 777.

♀. Differs from *rubelliana* in having all the crimson parts orange; the medial irregular patches of fore wing conjoined.
Hab. Bombay; Matheran. *Exp.* 60 millim.

Genus **ALPHÆA**.

Alphæa, *Wlk. Cat.* iii, p. 683 (1855).
Nyaca, *Moore, Lep. Atk.* p. 43 (1879).
Rajendra, *Moore, Lep. Atk.* p. 43.

Type, *A. fulvohirta*, Wlk.
Range. Throughout India, Ceylon, and Burma; Java.
Palpi short and hairy, extending beyond the frons. Hind tibiæ with two pairs of spurs. Fore wing rather long and narrow. Venation as in *Spilosoma*.

SECT. I. Antennæ of male with short branches, of female serrate.

A. *Abdomen of male clothed with long hair.*

1213. **Alphæa fulvohirta**, *Wlk. Cat.* iii, p. 684; *Butl. Ill. Het.* v, pl. 85, fig. 8; *C. & S.* no. 859.

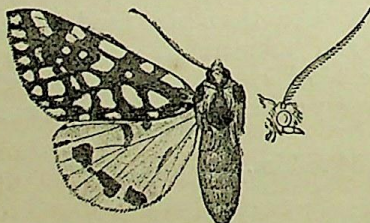



Fig. 7.
Alphæa fulvohirta, ♂. 1/1.

Palpi and frons black; vertex of head white; collar white, striped with black and slightly fringed with yellow; thorax black; tegulæ white, striped with black. Abdomen orange above, the underside white, banded and spotted with black. Fore wing smoky black, the veins pale and with numerous white spots in the interspaces. Hind wing white, with some black

marks on the costa; a lunulate mark at end of cell; an irregular interrupted submarginal band; some small marks on the margin near apex.

Hab. Sikhim. *Exp.* 55 millim.

1214. **Alphæa florescens,** *Moore, Lep. Atk.* p. 43, pl. ii, fig. 13; *C. & S.* no. 858.

♂. Differs from *fulvohirta* in the vertex of head being yellow; the collar fringed with red; abdomen crimson; femora red. Fore wing with the ground-colour olive-brown; the spots much fewer in number, those in the interno-median interspace being conjoined into a highly irregular streak, and the only other prominent spots being some on costa, one at end of cell, one beyond it, and conjoined submarginal and marginal series. Hind wing with the base black; the spot at end of cell and submarginal conjoined series large.

♀. The vertex of head white; fringe to collar and femora crimson; abdomen with a dorsal series of black spots.

Hab. Sikhim. *Exp.*, ♂ 54, ♀ 66 millim.

1215. **Alphæa imbuta,** *Wlk. Cat.* iii, p. 614; *Butl. Ill. Het.* v, pl. 86, fig. 1; *C. & S.* no. 860.

♂. Olive-brown; frons and vertex of head pale buff; abdomen above and femora crimson. Fore wing with the veins yellow; a white patch at base, with a black spot on it; some irregular white marks in the interno-median interspace; some spots on costa and others on outer area. Hind wing black, with a yellow postmedial spot below vein 2 and some conjoined spots on outer area.

♀ with a series of black dorsal spots on abdomen. Hind wing with an irregular yellow postmedial band from vein 3 to anal angle, and complete irregular marginal band.

Hab. Simla; Sikhim. *Exp.*, ♂ 44, ♀ 70 millim.

B. *Abdomen of male clothed with short scales.*

1216. **Alphæa quadriramosa,** *Koll. Hügel's Kaschmir,* iv, p. 468; *C. & S.* no. 822.

Palpi black, fringed with yellow; head and thorax white; collar with paired black spots and slightly fringed with yellow; thorax and tegulæ striped with black; abdomen orange, with dorsal segmental black bands and lateral and ventral spots. Femora orange. Fore wing white, with broad black fasciæ along subcostal, median, and submedian nervures, the fascia on median nervure dividing up into streaks along veins 2, 3, 4, 5, and spots on veins 6 and 7. Hind wing white, with a black lunule at end of cell and a submarginal series of four spots.

The markings may be much reduced and the hind wing unmarked.

Larva brownish black, slightly powdered with pale specks and with tufts of dark red hairs.

Hab. N.W. Himalayas; Khási and Nága Hills; ? Satara. *Exp.*, ♂ 40, ♀ 48 millim.

1217. **Alphæa tigrina,** *Moore, P. Z. S.* 1879, p. 398, pl. 32, fig. 4; *C. & S.* no. 850.

♂. Differs from *quadriramosa* in the branches of the antennæ being rather longer; colour orange-buff; tegulæ without the black stripe. Fore wing with the fasciæ along the subcostal nervure, median nervure and veins rising from it, and submedian nervure broader and more irregular; a submarginal series of black spots more or less joined to the median fascia. Hind wing with a black blotch at end of cell, a submarginal series, and some black marks on the inner and discal areas.

In some specimens the black markings of fore and hind wing extend over the greater part of the surface.

Hab. Palni Hills. *Exp.* 46 millim.

1218. **Alphæa leopardina,** *Koll. Hügel's Kaschmir*, iv, p. 467, pl. 21, fig. 2; *C. & S.* no. 802.

Nyaca divisa, *Wlk. Cat.* iii, p. 614; *Butl. Ill. Het.* v, pl. 86, fig. 2; *C. & S.* no. 857.

Palpi and frons black; vertex of head white; tegulæ black, fringed with white; thorax white, with a broad black stripe on vertex; abdomen crimson above, the extremity yellow, and with dorsal and lateral series of black spots. Fore wing white, with conjoined black patches occupying most of the surface; a broad fascia along median nervure coalescing with some patches from the costa and an oblique postmedial band bifurcating towards the costa; some smaller submarginal marks and a series of patches along inner margin. All these markings are, however, sometimes reduced and separated. Hind wing black, with an irregular white postmedial band, sometimes only extending from the costa to lower angle of cell; some submarginal and marginal marks.

One specimen has the whole of the underside of the fore wing except the outer area, and also the inner area of the hind wing, suffused with crimson, showing through to the upperside.

Hab. N.W. Himalayas and ? Khási Hills. *Exp.*, ♂ 45, ♀ 56 millim.

1219. **Alphæa vittata,** *Moore, P. Z. S.* 1879, p. 396, pl. 32, fig. 12; *C. & S.* no. 797.

Head and thorax black; vertex of head with a white band; tegulæ white, with a black spot; abdomen crimson above, black below, with a series of short dorsal black bands; femora crimson. Fore wing black; a white fascia from the base to the apex describing an almost even curve. Hind wing crimson, with a black

spot at end of cell and submarginal series of four spots, the two towards apex sometimes obsolete; cilia white.

Hab. Burma; Nilgiri plateau. *Exp.* 46 millim.

1220. **Alphæa biguttata,** *Wlk. Cat.* iii, p. 707; *C. & S.* no. 789.
Spilosoma lativitta, *Moore, P. Z. S.* 1865, p. 809; *C. & S.* no. 792.
Rajendra irregularis, *Moore, Lep. Ceyl.* ii, p. 72, pl. 107, fig. 2; *C. & S.* no. 790.

Differs from *vittata* in the white fascia of the fore wing being broader and elbowed at vein 2. Hind wing with the cilia black; in the variety *irregularis* white.

Hab. Sikhim; Pareshnáth; Canara; Nilgiris, W. slopes; Ceylon. *Exp.* 47 millim.

1221. **Alphæa nigricans,** *Moore, P. Z. S.* 1872, p. 572; *C. & S.* no. 793.

♂. Head and thorax black; a white band on vertex of head; tegulæ white, with a black spot; abdomen crimson, with black dorsal and ventral bands. Fore wing uniform dark red-brown, with very faint traces of the curved fascia. Hind wing crimson, with a brown band on the costa extending into end of cell and the three submarginal spots.

Hab. Deccan; Bombay; Matheran. *Exp.* 40 millim.

1222. **Alphæa dentata,** *Wlk. Cat.* iii, p. 708.
Aloa khandalla, *Moore, Cat. E. I. Co.* p. 361, pl. 9 *a*, fig. 13; *C. & S.* no. 791.

Differs from *biguttata* in being brownish black; the fascia of the fore wing more or less produced into the middle of cell and downwards at the elbow, whence it is bent upwards at a sharper angle and reaches the costa before the apex; a white patch on the outer margin below the apex and another at centre. Hind wing almost white in male, crimson in female; the cilia pale.

Hab. Bombay; Canara; Nilgiris. *Exp.* 52 millim.

1223. **Alphæa pannosa,** *Moore, P. Z. S.* 1879, p. 397, pl. 32, fig. 8; *Butl. Ill. Het.* vii, pl. 138, fig. 8 (larva); *C. & S.* no. 794.

Differs from *dentata* in having two brown spots on the collar; the tegulæ striped brown and white; abdomen with dorsal dark spots. Fore wing with the fascia extremely irregular and reaching the outer margin below the apex, a black spot on it at base; some spots on the costa and three transversely placed before the apex; some specimens with two spots at end of cell and two towards outer angle; others have the markings of the fore wing much reduced. Hind wing crimson, with a speck at end of cell; a large spot near apex, and one or two towards anal angle.

Larva black, with tufts of pale hair; a dorsal yellowish band and two lateral white bands; head red-brown; legs pale brown.

Hab. N.W. Himalayas. *Exp.*, ♂ 43, ♀ 50 millim.

1224. **Alphæa sipahi,** *Moore, P. Z. S.* 1872, p. 573; *C. & S.* no. 795.

♂. Differs from *pannosa* in the white band of the fore wing being broken up into numerous spots. Hind wing with two dark blotches on the costa as well as the submarginal marks.

Hab. Bombay; Mahableshwar; Madras. *Exp.* 34 millim.

SECT. II. Antennæ of male serrate, of female simple.

1225. **Alphæa obliquifascia,** n. sp.

♂. Head and thorax black-brown; vertex of head and tegulæ pale yellow; abdomen orange, with black dorsal bands and patch on last segment. Fore wing black-brown, with two white spots in the basal half of the interno-median interspace; a small spot at middle of cell; a postmedial oblique band of six spots from the apex and one to four spots on outer margin. Hind wing pale yellow, sometimes almost white; a black spot at end of cell; one submarginal spot towards apex and two towards anal angle; the submarginal spots sometimes obsolete; cilia pale.

♀ with the markings of the hind wing usually much more extensive than in the male and the cilia black.

Hab. Dharmsála; Assam; Burma; Java. *Exp.*, ♂ 36, ♀ 40 millim. Type in B. M.

1226. **Alphæa tripartita,** *Wlk. Cat.* iii, p. 706; *Butl. Ill. Het.* v, pl. 86, fig. 4; *C. & S.* no. 796.

♀ differs from *obliquifascia* in the band of six spots on the fore wing being curved instead of oblique and starting from the costa beyond the middle.

Hab. Moulmein. *Exp.* 42 millim.

1227. **Alphæa impleta,** *Wlk. Cat.* xxxi, p. 286; *C. & S.* no. 801.
Alphæa abdominalis, *Moore, P. Z. S.* 1867, p. 682; *C. & S.* no. 856.

Palpi and frons black; vertex of head white; antennæ black tipped with white; collar white, with two black patches; tegulæ white, each with a black spot; thorax white, with a broad black band on vertex; abdomen orange, with a series of black dorsal spots and the extremity black; the ventral surface black, with four series of white spots; legs black, mid and hind femora with large white spots. Fore wing black, with numerous large creamy-white spots in the interspaces. Hind wing pale orange, with a black mark at centre of costa extending into the cell; postmedial and submarginal series of irregular black marks; the apex black.

Hab. Sikhim. *Exp.*, ♂ 54, ♀ 66 millim.

Genus **AREAS.**

Areas, *Wlk. Cat.* iii, p. 658 (1855).
Melanareas, *Butl. Ill. Het.* vii, p. 29 (1889).

Type, *A. galactina,* Van der Hoev.

Range. Himalayas; Assam Hills; Borneo; Java.

Palpi porrect and long, the third joint naked. Hind tibiæ with two pairs of spurs. Venation as in *Spilosoma*.

SECT. 1. Antennæ bipectinated in male, the branches short, serrated in female.

1228. **Areas galactina,** *Van der Hoev. Tijdsch. Nat. Gesch.* 1840, p. 280.

Areas orientalis, *Wlk. Cat.* iii, p. 658; *C. & S.* no. 812.

Neumenes trigonalis, *Voll. Tijd. v. Ent.* 1863, p. 140, pl. x. fig. 1.

Head orange; frons and third joint of palpi black; antennæ black tipped with white; thorax white above, crimson below, with paired black spots on collar and two pairs on tegulæ; a broad

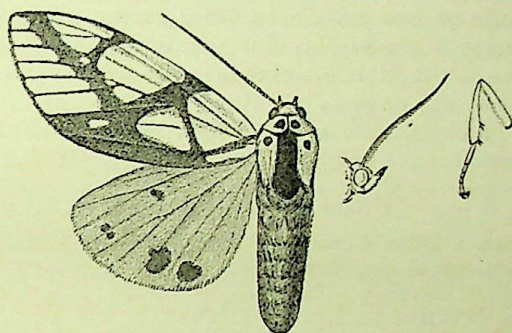



Fig. 8.—*Areas galactina*, ♂. 1/1.

brown band on vertex; thorax crimson above, yellow below, with dorsal and lateral series of black spots; femora orange. Fore wing white, the veins brown; an outwardly oblique brown band met on vein 2 by an inwardly oblique band which forks towards the costa; inner area brown, sending divergent spurs upwards near the base. Hind wing yellow; a brown spot on costa, one at end of cell; two to four small submarginal spots, the two towards apex often absent.

Hab. Himalayas; Khásis; Nágas; Borneo; Java. *Exp.*, ♂ 66, ♀ 90 millim.

1229. **Areas imperialis,** *Koll. Hügel's Kaschmir*, iv, p. 466, pl. 21 fig. 1; *C. & S.* no. 810.

Antennæ black, white at tips; head black, the vertex white. Thorax black; collar with white and crimson lateral stripes: tegulæ white, with a black spot; abdomen crimson, with black bands. Fore wing black; a white fascia above median nervure and vein 5; a streak from beyond upper angle of cell to costa before apex and from lower angle to outer margin above vein 2; a broad fascia from the base along vein 1; a series of marginal

spots. Hind wing yellow, with a black lunule at end of cell and four large submarginal patches, the two upper conjoined.

Larva black, with tufts of long ferruginous hair; head ferruginous; stigmata white.

Hab. N.W. Himalayas; Sikhim. *Exp.*, ♂ 80, ♀ 94 millim.

SECT. II. Antennæ of male simple.

1230. **Areas arginalis**, n. sp.

♂. Head crimson spotted with black, the third joint of palpi black. Thorax ochreous tinged with crimson, the collar, tegulæ, and vertex marked with black; abdomen crimson, with dorsal and lateral series of black spots. Fore wing smoky black; a white spot at base, three below costa, two in cell, four in interno-median interspace, and three on vein 1; a broad irregular maculate band from the costa beyond middle to outer margin above the angle; three submarginal spots. Hind wing crimson; three medial black spots; three submarginal blotches, the one near apex conjoined to some marks on the margin.

Hab. Nága Hills, 3500 feet (*Doherty*). *Exp.* 103 millim. Type in coll. Elwes.

Genus **CREATONOTUS.**

Creatonotos, *Hübn. Verz.* p. 169 (1818).
Rhodogastria, *Hübn. Verz.* p. 172.
Aloa, *Wlk. Cat.* iii, p. 699 (1855).
Savara, *Wlk. Cat.* xxxi, p. 320 (1864).
Bucæa, *Wlk. Cat.* xxxv, p. 1983 (1866).

Type, *C. interruptus*, Linn.

Range. Throughout India, Ceylon, and Burma; China; Penang; Java.

Palpi short and porrect. Hind tibiæ with one pair of spurs. Fore wing rather narrow. Venation as in *Spilosoma*. Fore wing in some specimens with vein 10 from cell, and vein 5 in both wings sometimes from above angle of cell.

SECT. I. (*Creatonotus*). Antennæ minutely ciliated in both sexes.

1231. **Creatonotus interruptus**, *Gmel. Syst. Nat.* 1. v, p. 2553; *Moore, Lep. E. I. Co.* pl. 17, figs. 1, 1 *a* (larva); *C. & S.* no. 787.
Creatonotus continuatus, *Moore, A. M. N. H.* (4) xx, 1877, p. 344; *id. Lep. Ceyl.* ii, pl. 108, figs. 4, 5, 5 *a*; *C. & S.* no. 786.
Bombyx francisca, *Fabr. Mant. Ins.* ii, p. 131.

Head, thorax, and fore wing pale pinkish ochreous; palpi and legs smoky black, the femora yellow; a broad dorsal band on thorax; abdomen crimson above, with dorsal and lateral series of black spots. Fore wing with a broad black fascia below median nervure; two black spots at end of cell, and a broad streak beyond the lower angle. Hind wing pale or dark fuscous; some specimens with a submarginal series of black spots.

The variety *continuatus* has additional black streaks on the fore wing below the costa, in cell, above inner margin, and in the marginal interspaces, but all the intergrades occur.

Larva black, sparsely clothed with long hairs; head marked with white; a yellow dorsal line with a series of orange spots on it; prolegs pale.

Hab. Throughout India, Ceylon, and Burma. *Exp.* 42 millim.

SECT. II. (*Rhodogastria*). Antennæ fasciculated in male.

A. *Abdomen crimson.*

1232. **Creatonotus moorei,** *Butl. Cist. Ent.* ii, p. 23; *id. Ill. Het.* v, pl. 85, fig. 2; *C. & S.* no. 820.
Aloa sara, *Swinh. P. Z. S.* 1889, p. 404.

Antennæ black, with the basal joint scarlet. Palpi scarlet at sides, white below, the terminal joint black; head white, with a crimson line behind it; thorax white; abdomen scarlet above, with a series of black dorsal spots, white below, with two series of black lateral spots. Wings white: fore wing with a scarlet fascia along the costa; a black speck at each angle of cell; some specimens with some spots between the lower angle of cell and inner margin and a subbasal spot on vein 2. Hind wing with a black spot at end of cell and a submarginal series of four, the two towards anal angle sometimes absent.

The form *sara* has the black spots prominent and a pair on the tegulæ.

Hab. Almora; Karáchi; Bombay. *Exp.*, ♂ 58, ♀ 44 millim.

1233. **Creatonotus collaris,** *Hmpsn. Ill. Het.* viii, p. 54, pl. 140. fig. 18.

♂. Differs from *moorei* in having the scarlet band at back of head broader; the collar fringed with scarlet; the costal fascia of fore wing broader; abdomen with broad dorsal black bands.

Hab. Nilgiris, W. slopes. *Exp.* 50 millim.

1234. **Creatonotus flavimargo,** n. sp.

♂. Differs from *collaris* in the black spots on abdomen being small. Wings with the black spots obsolescent; hind wing with a marginal yellow band.

Hab. Bhámo, Burma (*Fea*). *Exp.* 50 millim. Type in Mus. Genova.

B. *Abdomen yellow.*

1235. **Creatonotus lactineus,** *Cram. Pap. Exot.* ii, pl. 133, fig. D; *Moore, Lep. E. I. Co.* pl. 16, fig. 12 (larva); *C. & S.* no. 818.
Bombyx sanguinolenta, *Fabr. Ent. Syst.* iii, p. 473.
Aloa marginata, *Moore, P. Z. S.* 1883, p. 15, pl. 5, fig. 1; *C. & S.* no. 819.

Differs from *collaris* in having the red markings of a deep crimson tone; the band on head broader; in some specimens the black spots are entirely absent.

In the variety *marginatus* the marginal black spots of the hind wing have coalesced to form a complete band.

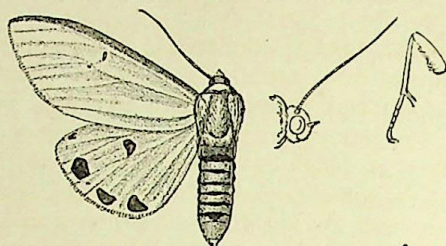



Fig. 9.—*Creatonotus lactineus*, ♂. 1/1.

Larva black, with lateral tufts of red-brown hair; a subdorsal series of scarlet spots; dorsal, subdorsal, and lateral series of black spots; 1st, 3rd, 4th, and 5th somites with sublateral spots; 11th somite with two spots only.

Hab. China; throughout India, Ceylon, and Burma; Java. *Exp.*, ♂ 56, ♀ 66 millim.

1236. **Creatonotus negritus**, *Swinh. MS.*

♀. Differs from *lactineus* in nearly the whole abdomen and wings being suffused with black; fore wing with a white streak in cell and two on inner area; the costa with a crimson streak towards apex; cilia of both wings white.

Hab. Khásis. *Exp.* 62 millim. Type in B. M.

1237. **Creatonotus insolatus**, *Swinh. P. Z. S.* 1889, p. 404.

♂. Differs from *lactineus* in the head and collar being without the crimson bands; abdomen with black dorsal spots instead of bands. Wings with the black spots almost absent: fore wing with the costal fascia narrow.

Hab. Thyetmyo, Burma. *Exp.* 36 millim.

1238. **Creatonotus albistriga**, *Wlk. Cat.* xxxi, p. 303; *C. & S.* no. 761.

Differs from *insolatus* in the band on the head being yellow; the thorax tinged with ochreous; tegulæ with dark spots. Fore wing with the costal stripe yellow; the veins white; the interspaces fuscous, with white streaks in and below the cell. Hind wing with the spot in cell and marginal spots large or small.

Hab. Ganjam. *Exp.* 44 millim.

SECT. III. (*Aloa*). Antennæ of male bipectinate; serrate in female.

1239. **Creatonotus emittens**, *Wlk. Cat.* iii, p. 638; *Moore, Lep. Ceyl.* ii, p. 74, pl. 108, figs. 3, 3 *a*; *C. & S.* no. 816.
Aloa candidula, *Wlk. Cat.* iii, p. 704; *C. & S.* no. 813.
Aloa diminuta, *Wlk. Cat.* iii, p. 705; *C. & S.* no. 815.
Spilosoma punctistriga, *Wlk. Cat.* iii, p. 676; *C. & S.* no. 821.

Aloa flora, *Swinh. P. Z. S.* 1885, p. 296, pl. 20, fig. 5; *C. & S.* no. 817.
Creatonotus rubricosta, *Moore, P. Z. S.* 1872, p. 573; *C. & S.* no. 788.

Head and thorax pinkish ochreous; abdomen crimson above, with series of dorsal and lateral black spots. Fore wing pinkish ochreous; a black fascia below median nervure from before the middle of cell to some way beyond its lower angle, the veins crossing it pale; a black submarginal streak above vein 5. Hind wing whitish, some specimens with a black spot at end of cell.

The S. Indian and Ceylon forms *emittens* and *flora* are much more suffused with pink than the Northern forms; in the former the markings of the fore wing are prominent, in the latter obsolete or only developed at end of cell.

Of the Northern forms, *diminutus* has the markings prominent; *candidulus* narrow or almost obsolete; *punctistriga* with a speck at end of cell and streak above vein 5 only.

Hab. N.W. Himalayas; Nepal; Manipur; and throughout S. India and Ceylon. *Exp.*, ♂ 30, ♀ 38 millim.

1240. **Creatonotus simplex,** *Wlk. Cat.* xxxi, p. 320; *C. & S.* no. 771.

Head and thorax brownish ochreous; abdomen orange above, with a dorsal series of black spots. Wings uniform ochreous. Underside of body smoky black.

Hab. Khandála; N. Canara. *Exp.*, ♂ 30, ♀ 38 millim.

1241. **Creatonotus fumipennis,** *Hmpsn. Ill. Het.* viii, p. 54, pl. 140, fig. 24.

♂. Head and thorax brownish ochreous; abdomen suffused with fuscous and with dorsal black segmental bands. Wings smoky black: fore wing with the costa and base of inner margin ochreous.

Hab. Nilgiris. *Exp.* 29 millim.

Genus PHISSAMA.

Phissama, *Moore, Lep. E. I. Co.* p. 362 (1858).
Amphissa, *Wlk. Cat.* iii, p. 684 (1855), præocc.

Type, *P. transiens*, Wlk.

Range. China; Philippines; throughout India and Burma; Borneo; Celebes.

Palpi extremely minute. Antennæ minutely ciliated in both sexes. Hind tibiæ with a minute terminal pair of spurs. Fore wing narrow. Venation as in *Spilosoma*.

1242. **Phissama transiens,** *Wlk. Cat.* iii, p. 675; *Moore, Lep. E. I. Co.* pl. 16, fig. 13 (larva); *C. & S.* no. 762.
Amphissa vacillans, *Wlk. Cat.* iii, p. 685; *C. & S.* no. 763.
Aloa isabellina, *Wlk. Cat.* iii, p. 705.

Head and thorax dirty white; palpi and femora orange; abdomen orange above, white below, with dorsal, lateral, and ventral series of black spots. Fore wing very pale fuscous; the costa and base of inner margin whitish; black spots in and just beyond each angle of cell. Hind wing pale fuscous; some specimens with a black submarginal spot above vein 5 and two towards anal angle.

Fig. 10.—*Phissama transiens*, ♂. 1/1.

Typical *transiens* is almost white, the form *vacillans* darker fuscous.

Larva black, blotched with red-brown and with tufts of red-brown hair, the lateral tufts arising from ferruginous tubercles; a dorsal broad white line; head black, marked with white.

Hab. China; Philippines; throughout India and Burma; Borneo; Celebes. *Exp.*, ♂ 50, ♀ 60 millim.

Genus NICÆA.

Nikæa, *Moore, Lep. Atk.* p. 11 (1879).

Type, *N. longipennis*, Wlk.

Range. Japan; N. India.

Palpi porrect, reaching just beyond the frons; antennæ ciliated in male. Hind tibiæ with two pairs of spurs. Fore wing long and narrow in male, the outer margin oblique, shorter in female. Venation as in *Spilosoma*, except that veins 6 and 7 of the hind wing are stalked.

1243. **Nicæa longipennis,** *Wlk. Cat.* iii, p. 655; *Butl. Ill. Het.* v, pl. 82, fig. 7; *C. & S.* nos. 342, 803.

Head and thorax black, vertex of head orange; abdomen orange, with dorsal and lateral black spots. Fore wing black, with two

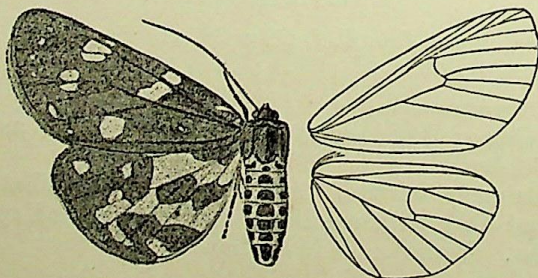



Fig. 11.—*Nicæa longipennis*, ♀. 1/1.

white specks below the costa near base; a bifid spot below middle of costa; a single spot below vein 2; a trifid postmedial spot

below the costa and bifid spot on vein 4; a submarginal series of specks. Hind wing orange, the base and costa black; a geminate black spot from median nervure to inner margin and another near anal angle; a large spot at end of cell joined to the apical and marginal black areas; a subapical white spot.

Hab. Kumaun; Sikhim; Silhet. *Exp.*, ♂ 60–70, ♀ 64 millim.

Genus **LEUCOPARDUS**, nov.

Type, *L. tigrinus*, Hmpsn.
Range. Khási Hills.

Palpi porrect, reaching beyond the frons, the second joint fringed with hair. Antennæ simple in male. Tibiæ with the spurs long. Fore wing with the costa arched at base; vein 3 from before angle of cell; 4 and 5 from angle; 6 from below upper angle; 7, 8, 9, and 10 stalked. Hind wing with the outer margin slightly angled at vein 3; veins 3 and 4 stalked; 5 from above angle of cell; 6 and 7 from upper angle; 8 from just before middle of cell.

1244. **Leucopardus tigrinus**, n. sp.

♂. Head, thorax, and abdomen whitish, slightly suffused with fuscous, the anal tuft ochreous. Fore wing white, with a fuscous streak along inner margin; two very oblique fuscous bands from the costa beyond the middle to interno-median interspace; a band

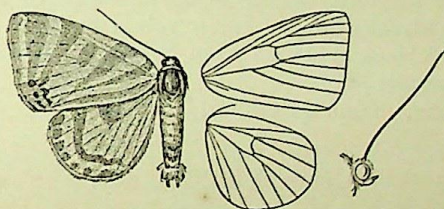



Fig. 12.—*Leucopardus tigrinus*, ♂. $\frac{1}{1}$.

on discocellulars; postmedial, submarginal, and marginal bands ending in a yellow patch at anal angle, with some waved black lines on it in continuation of the fuscous bands. Hind wing white, with the base fuscous; a large spot at end of cell; a submarginal curved band; a series of marginal spots.

Hab. Khásis. *Exp.* 43 millim. Type in coll. Moore.

Genus **CAMPTOLOMA**.

Camptoloma, *Feld. Reis. Nov.* p. 2 (1875).

Type, *C. interioratum*, Wlk., from China.
Range. Japan; China; Assam.

Palpi slender and porrect. Antennæ simple. Tibiæ with the spurs long. Fore wing with the costa arched at base; the apex rounded; outer margin very oblique; inner margin short and rounded; vein 3 from before angle of cell; 4 and 5 on a short stalk or from cell; 6 from below upper angle; 7, 8, 9, and 10 stalked. Hind wing with veins 3 and 4 from angle of cell; 5 from above angle; 6 and 7 stalked; 8 from just before middle of cell.

1245. **Camptoloma binotatum,** *Butl. A. M. N. H.* (5) vii, 1881, p. 35; *C. & S.* no. 566.
Camptoloma flagrans, *Swinh. A. M. N. H.* (6) xii, p. 214.

♀. Head, thorax, and abdomen orange-yellow, the last with the extremity crimson; tegulæ striped with black. Fore wing yellow; a black line from base of costa crossing the cell and running along vein 2, where it is met by a line from middle of costa; a black line on discocellulars; postmedial, submarginal, and

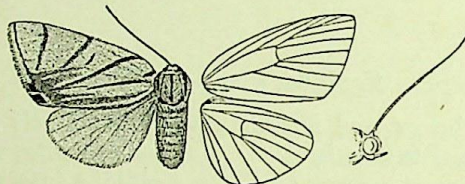



Fig. 13.—*Camptoloma binotatum*, ♀. $\frac{1}{1}$.

marginal lines all terminating in a scarlet patch at anal angle, which sends a streak inwards below vein 1 and one on each side of vein 3; two black spots on cilia towards outer angle. Hind wing bright orange.

Hab. Shillong. *Exp.* 44 millim.

Genus **MOOREA**, nov.

Grotea, *Moore, P. Z. S.* 1865, p. 797 (præocc.).

Type, *M. argus*, Wlk.
Range. Sikhim; Khási Hills.

Palpi porrect, of moderate length; the first two joints fringed with hair. Antennæ simple. Hind tibiæ with two pairs of minute spurs. Fore wing with vein 3 from before end of cell; 4 and 5 from the end; 6 from upper angle; 7, 8, 9, 10 stalked; 11 running close alongside of or touching 10. Hind wing with vein 3 from before angle of cell; 4 and 5 from angle; 6 and 7 from upper angle; 8 from below middle of cell.

1246. **Moorea argus,** *Wlk. Trans. Ent. Soc.* (3) i, 1862, p. 73; *C. & S.* no. 798.
Grotea elegans, *Moore, P. Z. S.* 1865, p. 797, pl. 43, fig. 1; *C. & S.* no. 631.

Head, thorax, and abdomen golden yellow; third joint of palpi black; collar with paired black spots; tegulæ with two pairs of spots; thorax with three spots; abdomen with dorsal, ventral, and two pairs of lateral spots. Fore wing golden yellow; some black spots near the base; numerous large black spots centred with bluish white; apical area black, with some bluish-white spots

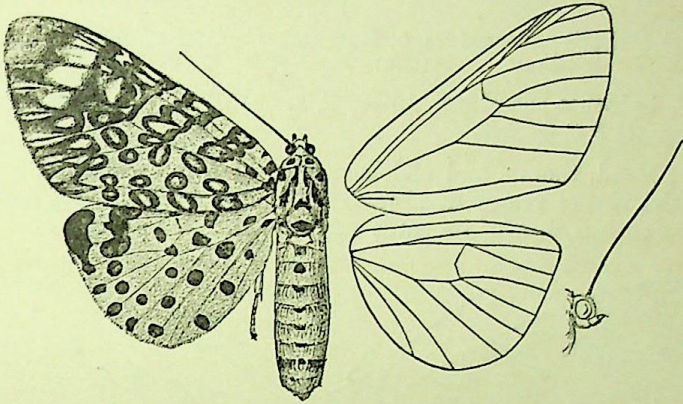



Fig. 14.—*Moorea argus*, ♂. ⅔.

beyond the cell and towards outer angle; a small yellow spot below the costa, and a subapical band of white spots from below the costa to vein 4. Hind wing golden yellow, with a black sub-basal spot and antemedial, medial, submarginal, and marginal series; the two latter conjoined into patches towards costa and at apex.

Hab. Sikhim; Khásis. *Exp.*, ♂ 125, ♀ 130 millim.

Genus **CALPENIA.**

Calpenia, *Moore, P. Z. S.* 1872, p. 571.

Type, *C. saundersi*, Moore.

Range. Sikhim; Khási Hills; Burma.

Palpi obliquely porrect, reaching beyond the frons, and fringed with hair. Antennæ simple in female. Tibiæ with the spurs short. Fore wing long and broad; vein 3 from before angle of cell; 4 and 5 from angle; 6 from upper angle; 7, 8, 9, 10 stalked; 11 almost touching 10. Hind wing with vein 3 from before angle of cell; 4 and 5 from angle; 6 and 7 stalked; 8 from before middle of cell.

1247. **Calpenia khasiana**, *Moore, P. Z. S.* 1878, p. 5; *C. & S.* no. 542.

♀. Head black; thorax pale brown, the tegulæ fringed with orange; abdomen orange, with dorsal, ventral, and two pairs of

lateral blackish spots. Fore wing pale reddish brown, with three yellow spots below the costa; a pale fascia in interno-median interspace joined by a postmedial maculate band with two series of small orange spots beyond it. Other specimens have the spots below the costa obsolete, and the postmedial maculate band reduced to two or three spots. Hind wing orange, with some basal dark streaks; medial, postmedial, submarginal, and marginal series of spots.

Hab. Khásis; Bernardmyo, Burma. *Exp.* 92 millim.

1248. **Calpenia saundersi,** *Moore, P. Z. S.* 1872, p. 571, pl. 33, fig. 1; *C. & S.* no. 543.

♀. Head, thorax, and abdomen orange; frons and third joint of palpi black; vertex of thorax and collar marked with black; tegulæ each with a white patch edged with black; abdomen with

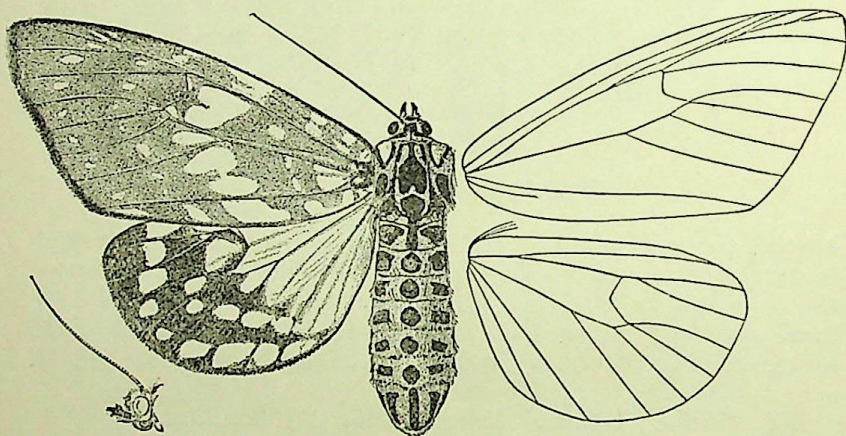



Fig. 15.—*Calpenia saundersi*, ♀. 1/1.

dorsal, ventral, and two pairs of lateral black spots, becoming streaks on the anal segment. Fore wing olive-fuscous, with an orange patch at base; subbasal and antemedial series of small pale yellow spots; a medial series of large spots, and postmedial and submarginal series of small spots. Hind wing with the basal area pale yellow, the outer area olive-fuscous, with postmedial and submarginal pale yellow series of spots; the edge of the yellow area dentate.

Hab. Sikhim. *Exp.* 100 millim.

Genus CALLIMORPHA.

Callimorpha, *Latr. Gen. Crust. Ins.* iv, p. 220 (1809).
Hypercompa, *Steph. Ill. Brit. Ent., Haust.* ii. p. 67 (1829).
Carcinopyga, *Feld. Reis. Nov.* p. 2, pl. 101, fig. 3 (1875).

Type, *C. dominula*, Linn., from Europe.
Range. Europe; China; Himalayas; Assam; Burma.

Palpi porrect and long. Antennæ of male minutely ciliated. Hind tibiæ with two pairs of spurs. Fore wing rather long and narrow; vein 3 from before angle of cell; 4 and 5 from angle; 6 from upper angle; 9 arising from 10 and anastomosing with 8 to form the areole. Hind wing with vein 3 from before angle of cell; 4 from angle; 5 from above angle; 6 and 7 stalked or from cell; 8 from before middle of cell.

1249. **Callimorpha principalis**, *Koll. Hügel's Kaschmir*, iv, p. 465, pl. 20, fig. 2; *Butl. Ill. Het.* vii, pl. 138, fig. 3 (larva); *C. & S.* no. 806.

Hypercompa flavicolor, *Moore, P. Z. S.* 1879, p. 397; *C. & S.* no. 800.

Head crimson; palpi with a black spot on each joint; a black spot on frons and two at back of head; collar black, edged with crimson; thorax orange, the tegulæ and vertex striped with metallic green; abdomen crimson above, pale yellow below, with

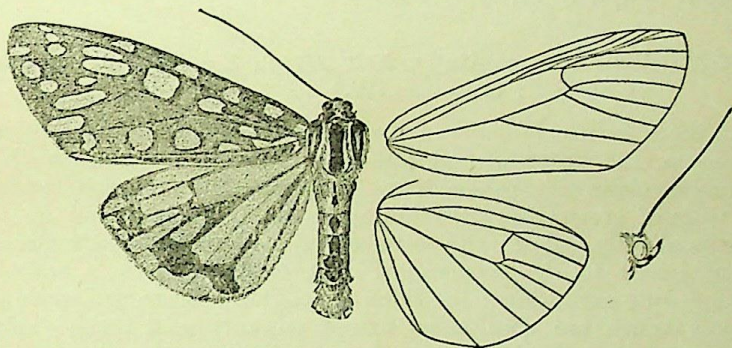



Fig. 16.—*Callimorpha principalis*, ♂. 1/1.

dorsal and lateral series of spots; legs black, marked with crimson and pale yellow. Fore wing metallic green, with numerous yellow spots. Hind wing orange; the veins streaked with black; a submarginal series of large black blotches; centre of outer margin black.

A variety from Sikhim has the streaks on the nervures of hind wing very broad and occupying most of the wing.

Larva black, with three setiferous tubercles to each somite; a narrow orange and yellow dorsal stripe whitish between the somites; a white subdorsal stripe; a lateral band composed of white transverse striæ; legs yellow.

Hab. Kashmir; N.W. Himalayas; Sikhim; Burma. *Exp.* 86 millim.

1250. **Callimorpha similis**, *Moore, P. Z. S.* 1879, p. 397; *C. & S.* no. 808.

Differs from *principalis* in being paler. Fore wing with the

spots very pale yellow, or all white except the basal and costal spots. Hind wing with the ground-colour white; the black markings much reduced, and the veins often but slightly tinged with black.

Hab. Sikhim. *Exp.*, ♂ 54, ♀ 66 millim.

1251. **Callimorpha plagiata,** *Wlk. Cat.* iii, p. 655; *Butl. Ill. Het.* v, pl. 85, fig. 1; *C. & S.* no. 805.

Differs from *principalis* in the ground-colour of the head, thorax, and abdomen being orange; tegulæ not fringed with orange; palpi and frons black; abdomen with black bands. Fore wing with the spots in interno-median interspace large; one large spot beyond the cell, and a series of large elongate submarginal spots. Hind wing without the black streaks on veins; medial and submarginal series of spots; some specimens with a spot at origin of vein 2.

Hab. N.W. Himalayas; Eastern Himalayas; Yunnan; Assam; Nágas. *Exp.*, ♂ 71, ♀ 92 millim.

1252. **Callimorpha equitalis,** *Koll. Hügel's Kaschmir,* iv, p. 465, pl. 20, fig. 3; *C. & S.* no. 799.

Differs from *principalis* in the head and abdomen being paler crimson, the latter with dorsal black bands; thorax with the ground-colour very pale yellow. Fore wing fuscous, with hardly a tinge of green; the spots large and white, the basal and costal spots slightly yellow; the postmedial spots large, obliquely placed and joined to the submarginal spot between veins 3 and 4. Hind wing pure white; the veins fuscous; a submarginal series of spots which are obsolescent except towards anal angle; cilia fuscous except at middle.

Hab. Himalayas from Simla to Sikhim; Khásis; Burma. *Exp.*, ♂ 70, ♀ 80 millim.

1253. **Callimorpha nyctemerata,** *Moore, Lep. Atk.* p. 38; *C. & S.* no. 804.

Differs from *equitalis* in the head, thorax, and abdomen being orange. Fore wing with an extra spot below the centre of median nervure; the second and fourth spots in interno-median interspace small; the postmedial oblique series large; the apical spots forming more complete series. Hind wing with the veins but slightly tinged with black; the submarginal series of spots more or less complete; some specimens with an incomplete medial series.

Hab. Sikhim. *Exp.*, ♂ 62, ♀ 70 millim.

*1254. **Callimorpha? lichenigera,** *Feld. Reis. Nov.* pl. 101, fig. 3; *C. & S.* no. 767.

♀. Head and thorax grey. Antennæ ochreous; abdomen

orange above, black at sides, the black encroaching on the upperside of the anal segment. Fore wing grey, irrorated with black, the base yellow; five transverse yellow bands with waved edges, the postmedial band excurved round end of cell. Hind wing crimson; a black spot at end of cell; two elongate submarginal patches and a small spot above vein 1.

Felder's MS. genus *Carcinopyga* will probably be found to stand when this insect is rediscovered.

Hab. Ladák. *Exp.* 70 millim.

Genus **AXIOPŒNA.**

Axiopœna, *Ménét. Bull. Acad. Pétersb.* ix, p. 42 (1841).

Type, *A. maura*, Eichw.

Range. Central Asia; Baluchistan.

Palpi long, rather slender, and porrectly upturned. Antennæ simple in both sexes. Hind tibiæ with two pairs of minute spurs. Fore wing large and ample; vein 3 from before angle of cell; 5 from just above angle; 6 from upper angle; 7, 8, 9 stalked; 10 from the cell. Hind wing with vein 3 from before angle of cell; 5 from above the angle; 6 and 7 stalked; 8 from before middle of cell.

1255. **Axiopœna maura,** *Eichw. Zool. Spec.* ii, p. 196.
Axiopœna fluviatilis, *Swinh. Trans. Ent. Soc.* 1885, p. 351, pl. 9, fig. 7; *C. & S.* no. 2273.

Head and thorax smoky black: collar fringed with crimson. Abdomen black; the segments fringed with crimson. Fore wing smoky black. Hind wing with the basal half crimson; the outer

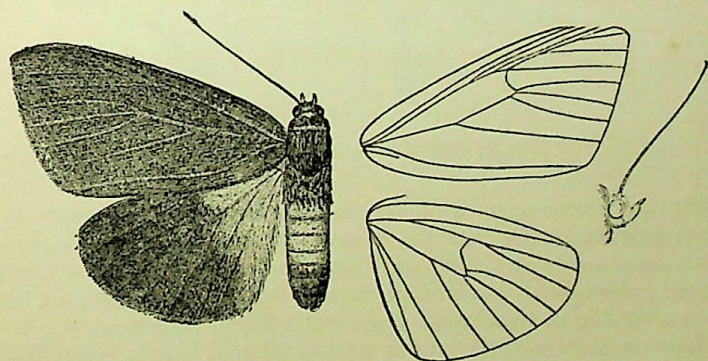



Fig. 17.—*Axiopœna maura*, ♂. ⅔.

half smoky black; some specimens with a crimson spot beyond the cell.

The amount of crimson suffusion on underside of hind wing varies greatly, being least in the form *fluviatilis*.

Hab. Central Asia and Quetta. *Exp.*, ♂ 100, ♀ 112 millim.

Genus PELOCHYTA.

Pelochyta, *Hübn. Verz.* p. 171 (1818).
Amerila, *Wlk. Cat.* iii, p. 725 (1855).

Type, *P. vidua*, Cram., from Africa.

Range. Africa; Formosa; throughout India, Burma, and Ceylon; Aru; Australia; New Britain.

Palpi porrectly upturned and slender. Antennæ nearly simple. Fore wing with the costa arched; the outer margin long and obliquely curved; veins 3, 4, 5 from angle of cell; 6 from below upper angle; 7, 8, 9 stalked; 10 from cell. Hind wing with the anal angle slightly produced; outer margin nearly straight; apex slightly acute; veins 3, 4, 5 from close to angle of cell; 6 and 7 from upper angle; 8 from near end of cell.

1256. **Pelochyta astrea,** *Drury, Ins.* ii, pl. 28, fig. 4; *C. & S.* no. 764.
Phalæna melanthus, *Cram. Pap. Exot.* iii, pl. 286, fig. B.
Amerila rhodopa, *Wlk. Cat.* xxxi, p. 305; *C. & S.* no. 766.
Rhodogastra fraterna, *Moore, Trans. Ent. Soc.* 1884, p. 356; *C. & S.* no. 765.

Palpi crimson, with a black spot on each joint. Antennæ red-brown, with the basal joint crimson. Head and thorax whitish fuscous; the head with two black spots; collar with two pairs of

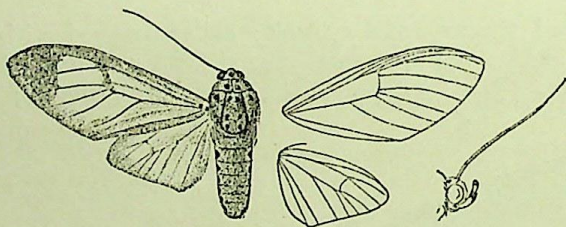



Fig. 18.—*Pelochyta astrea*, ♂. ½.

spots; pro-, meso-, and metathorax each with a pair of spots. Fore wing hyaline, with two black spots at the base; the margins, apical area, and a band on discocellulars pale fuscous. Hind wing hyaline, with a marginal fuscous band. Legs crimson, with the outer side of the femora and tibiæ whitish fuscous.

Larva green, slightly hairy; with subdorsal and lateral rows of small black spots; spiracles brown; head yellow.

Hab. Formosa; throughout India, Ceylon, and Burma. *Exp.*, ♂ 50–54, ♀ 64–72 millim.

Subfamily LITHOSIINÆ.

Moths of diurnal or crepuscular habits; in the typical section the fore wing is very long and narrow, and both wings have lost some of their veins. Proboscis present. Mid tibiæ with one pair of spurs; hind tibiæ generally with two pairs.

Larva sparsely covered with hair and forming a slight coccoon; most of the typical section being lichen-feeders.

Key to the Genera.

- *a*. Fore wing long and ample, the outer margin oblique.
  - a'. Fore wing with an areole.
    - a^2. Fore wing with the areole long.
      - a^3. Palpi upturned, the 2nd joint reaching vertex of head.
        - a^4. Palpi with the 3rd joint long and spatulate .... 1. ELIGMA, p. 43.
        - b^4. Palpi with the 3rd joint much shorter and acute.
          - a^5. Fore wing with the apex and outer margin rounded .... 2. MIGOPLASTIS, p. 44.
          - b^5. Fore wing with the apex produced, the outer margin straight. 3. DILEMERA, p. 45.
      - b^3. Palpi with the 2nd joint not reaching vertex of head.
        - a^4. Hind wing with vein 3 from some way before the end of cell ...... 7. CUROBA, p. 52.
        - b^4. Hind wing with vein 3 from the end of cell.................... 6. ARGINA, p. 50.
    - b^2 Fore wing with the areole short.
      - a^3. Hind wing with vein 8 given off from 7 near end of cell................ 5. SECUSIO, p. 50.
      - b^3. Hind wing with vein 8 given off from 7 before middle of cell............ 4. NYCTEMERA, p. 46.
  - b'. Fore wing with no areole.
    - a^2. Fore wing with vein 10 stalked with 7, 8, 9 .... 9. TATARGINA, p. 54.
    - b^2. Fore wing with vein 10 from the cell.. 8. CASTABALA, p. 53.
- *b*. Fore wing long and narrow; the outer margin short.
  - a'. Both wings with vein 5 present.
    - a^2. Hind wing with vein 5 from above angle of cell.
      - a^3. Hind wing with veins 3 and 4 from a point .... 10. DEIOPIA, p. 54.
      - b^3. Hind wing with veins 3 and 4 stalked.
        - a^4. Fore wing with an areole........ 12. KERALA, p. 62.
        - b^4. Fore wing with no areole.
          - a^5. Fore wing with vein 10 from the cell .... 11. CYANA, p. 56.
          - b^5. Fore wing with vein 10 stalked with 7, 8, 9 .... 14. ADREPSA, p. 64.

b^2. Hind wing with veins 4 and 5 stalked or from a point.	
a^3. Palpi upturned.	
a^4. Palpi with the 3rd joint reaching above vertex of head; fore wing with vein 10 from beyond the areole	15. AGRISIUS, p. 64.
b^4. Palpi with the 3rd joint not reaching above vertex of head; fore wing with vein 10 from the areole.	
a^5. Hind wing with veins 4 and 5 from the cell................	16. MACROBROCHIS, [p. 65.
b^5. Hind wing with veins 4 and 5 stalked.	
a^6. Thorax and abdomen somewhat stout and hairy	17. SIDYMA, p. 67.
b^6. Thorax and abdomen slight and smooth	19. GNOPHRIA, p. 69.
b^3. Palpi porrect.	
a^4. Fore wing of moderate breadth.	
a^5. Fore wing with no areole	18. MAHAVIRA, p. 68.
b^5. Fore wing with an areole	20. PARAONA, p. 71.
b^4. Fore wing long and narrow; no areole........................	21. PHILAGRIA, p. 71.
b'. Fore wing with vein 5 present; hind wing with vein 5 absent.	
a^2. Fore wing with no areole.	
a^3. Hind wing with veins 3 and 4 stalked	13. DOHERTYA, p. 63.
b^3. Hind wing with veins 3 and 4 from cell.	
a^4. Fore wing with the apex rounded.	22. CHRYSÆGLIA, p. 72.
b^4. Fore wing with the apex truncate, then produced to a point........	38. OXACME, p. 94.
b^2. Fore wing with an areole.	
a^3. Palpi porrect; hind wing with veins 3 and 4 stalked	23. ŒONISTIS, p. 73.
b^3. Palpi upturned; hind wing with veins 3 and 4 from cell	26. PTYOPTEROTA, [p. 75.
c'. Both wings with vein 5 absent.	
a^2. Palpi porrect.	
a^3. Hind wing with vein 4 present.	
a^4. Fore wing with the costa slightly arched, the outer margin oblique.	
a^5. Hind wing with the cell open..	24. CHRYSORABDIA, [p. 73.
b^5. Hind wing with the cell closed.	
a^6. Fore wing with the cell very long and narrow.	
a^7. Hind wing with veins 6 and 7 stalked or from end of cell.	
a^8. Fore wing with veins 6 and 7 curved downwards after their origin	25. THYSANOPTYX, [p. 74.
b^8. Fore wings with veins 6 and 7 straight	27. PRABHASA, p. 76.

b^7. Hind wing with vein 7 given off before end of cell. 28. LOPHONEURA, p. 78.

b^6. Fore wing with the cell shorter and broader.

a^7. Fore wing with vein 10 not stalked with 7, 8, 9...... 29. LITHOSIA, p. 79.

b^7. Fore wing with vein 10 stalked with 7, 8, 9 ...... 30. MITHUNA, p. 86.

b^4. Fore wing triangular, with the costa very much arched .... 32. NISHADA, p. 88.

c^4. Fore wing with the apex acute, the outer margin straight and erect, the outer angle produced.. 31. TEULISNA, p. 86.

b^3. Hind wing with vein 4 absent in both sexes .... 33. GAMPOLA, p. 89.

b^2. Palpi upturned .... 34. SIMAREEA, p. 90.

c. Fore wing short, the outer margin obliquely curved.

a'. Hind wing with vein 3 absent.

a^2. Fore wing very short, broad and rounded; veins 6 and 7 stalked, 8, 9, 10, 11 running nearly straight up to the costa, 11 and 12 anastomosing .. 35. HEMONIA, p. 91.

b^2. Fore wing of normal shape.

a^3. Both wings with vein 6 absent .... 37. COSTARCHA, p. 93.

b^3. Vein 6 absent in fore wing, present in hind wing .... 40. NARASODES, p. 95.

c^3. Both wings with vein 6 present.

a^4. Fore wing with veins 5 and 10 present.

a^5. Fore wing with veins 7, 8, 9 stalked.

a^6. Palpi porrect .... 36. ÆMENE, p. 91.

b^6. Palpi upturned .... 39. UTRICULOFERA, p. 94.

b^5. Fore wing with veins 7, 8 stalked, 9 from cell .... 41. DIDUGA, p. 96.

b^4. Fore wing with veins 5 and 10 absent, 7, 8, 9 stalked.......... 42. PSEUDOBLABES, p. 97.

b'. Hind wing with vein 3 present.

a^2. Wings clothed with well-formed scales.

a^3. Hind wing with vein 5 absent...... 46. ANACHROSTIS, p. 100.

b^3. Hind wing with vein 5 present.

a^4. Palpi with the 3rd joint very long, slender, and spatulate at tip .... 65. CACYPARIS, p. 126.

b^4. Palpi with the 3rd joint short or moderate.

a^5. Hind wing with veins 3, 4, 5 stalked and much bent........ 66. CHANDICA, p. 127.

b^5. Hind wing with veins 4 and 5 from near angle of cell or stalked.

a^6. Fore wing with veins 6, 9, and 10 from cell; 7 and 8 stalked. 43. GARUDINIA, p. 97.

b^6. Fore wing with veins 6, 7, 8 stalked; hind wing with veins 4 and 5 on a long stalk. 44. PADENIA, p. 98.

c^6. Fore wing with veins 6, 7 and 8, 9 stalked.
a^7. Fore wing of normal shape. 45. EUGOA, p. 99.
b^7. Fore wing short, broad, and rounded................ 47. TRISCHALIS, p. 101.
d^6. Fore wing with veins 7, 8, and 9, 10 stalked.
a^7. Palpi porrect .... 49. NOTATA, p. 102.
b^7. Palpi upturned .... 50. HOLOCRASPEDON, [p. 102.
e^6. Fore wing with veins 8, 9 stalked; 7 from cell........ 48. TROPACME, p. 101.
f^6. Fore wing with veins 7, 8, 9 stalked.
a^7. Palpi upturned, reaching vertex of head.
a^8. Fore wing with veins 4 and 5 from cell; hind wing with veins 3, 4 and 6, 7 from cell .... 52. IDOPTERUM, p. 103.
b^8. Fore wing with veins 4 and 5 stalked; hind wing with veins 3, 4 and 6, 7 stalked .... 53. SCAPTESYLE, p. 104.
b^7. Palpi short and porrect.
a^8. Hind tibiæ with one pair of spurs.............. 54. GURNA, p. 105.
b^8. Hind tibiæ with two pairs of spurs.
a^9. Antennæ with the shaft clothed with hair.... 55. NEPITA, p. 105.
b^9. Antennæ with the shaft smoothly scaled .... 56. MILTOCHRISTA, [p. 107.
g^6. Fore wing with veins 8, 9, 10 stalked .... 51. TRICHOGYIA, p. 103.
b^2. Wings sparsely clothed with hair-like scales and semidiaphanous.
a^3. Antennæ with the basal joint not dilated.
a^4. Hind wing with veins 3 and 4 stalked.
a^5. Fore wing with vein 11 given off from 10, then anastomosing with 12.................... 58. MACHÆROPHORA, [p. 121.
b^5. Fore wing with vein 11 free from 10.................... 60. THUMATHA, p. 122.
b^4. Hind wing with veins 3 and 4 from cell.
a^5. Wings narrow .... 57. TRICHOLEPIS, p. 120.
b^5. Wings broad .... 59. XANTHOCRASPEDA, [p. 121.
b^3. Antennæ with the basal joint dilated and hairy.
a^4. Antennæ with the basal joint of moderate length.
a^5. Fore wing without veinlets between vein 12 and the costa.
a^6. Fore wing with veins 9 and 11 present................ 61. NUDARIA, p. 122.

Genus ELIGMA.

Eligma, *Hübn. Verz.* p. 164 (1818).
Panglima, *Moore, Lep. E. I. Co.* p. 297 (1858).
Surina, *Wlk. Proc. Nat. Hist. Soc. Glasgow*, i, p. 333 (1869).

Type, *E. narcissus*, Cram.
Range. Africa; China; throughout India and Ceylon; Penang; Java.

Palpi upturned, the second joint reaching above vertex of head, the third very long and slender, and somewhat spatulate at tip. Antennæ with the cilia minute. Tibiæ thickly scaled. Fore wing narrow, the costa much arched at base; the outer margin nearly erect to vein 3, then oblique to outer angle; veins 3, 4, 5 from close to lower angle of cell; 6 from just below upper angle; 7 and 10 from a long areole formed by the anastomosis of 8 and 9. Hind wing with veins 3, 4, 5 from close to lower angle of cell; 6 and 7 from upper angle.

1257. **Eligma narcissus**, *Cram. Pap. Exot.* i, pl. 73, figs. E, F; *C. & S.* no. 559.

Head and thorax grey-brown, spotted with black; abdomen bright yellow, with dorsal and lateral series of black spots. Fore legs grey-brown, spotted with black. Mid and hind legs yellow,

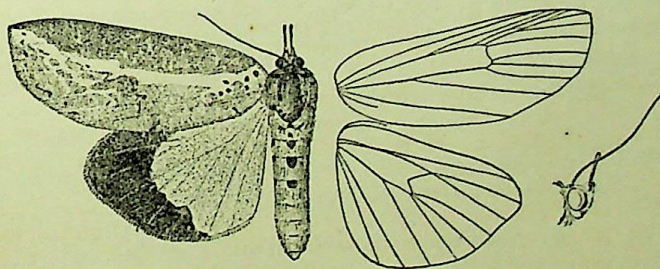



Fig. 19.—*Eligma narcissus*, ♂. ½.

with black spots on the tibiæ, the tarsi grey-brown. Fore wing grey-brown; the costal area with an olive tinge; an irregular and diffused curved white fascia from base to apex; some basal and

subbasal black spots; a waved black line from lower angle of cell to inner margin; a submarginal series of black spots, those towards outer angle conjoined into streaks. Hind wing bright yellow; the apical area black, suffused or streaked with dark blue, and terminating at vein 1 *b*; cilia white at tips.

Hab. China; Ganjam; S. India; Ceylon; Penang; Java. *Exp.*, ♂ 68, ♀ 80 millim.

Genus MIGOPLASTIS.

Migoplastis, *Feld. Verh. zool.-bot. Ges. Wien,* 1868, p. 285.
Dondera, *Moore, A. M. N. H.* (4) xx, 1877, p. 344.
Pachyphilona, *Butl. Trans. Ent. Soc.* 1875, p. 325.

Type, *M. correcta*, Wlk.

Range. Nilgiris; Ceylon.

Palpi porrect, extending considerably beyond the frons. Antennæ bipectinate in both sexes. Mid and hind tibiæ with the spurs minute. Fore wing with the apex and outer margin rounded; vein 3 from before angle of cell, 5 from above it; 6 from upper angle; 7 and 10 from a long areole formed by the anastomosis of 8 and 9. Hind wing with vein 2 from before angle of cell; 5 from the angle.

SECT. I. (*Migoplastis*). Hind wing of male not excised at anal angle; veins 6 and 7 from cell; the branches of antennæ long.

1258. **Migoplastis correcta,** *Wlk. Cat.* xxxi, p. 217; *C. & S.* no. 546.
Migoplastis ceylanica, *Feld. Verh. zool.-bot. Ges. Wien,* 1868, p. 285; *Moore, Lep. Ceyl.* ii, pl. 100, fig. 5.

Head and thorax ochreous brown; a black speck on vertex of head, two on collar, two on each patagium, and one each on pro-, meso-, and metathorax; abdomen yellow, with a dorsal and two lateral paired series of black spots. Fore wing ochreous brown, with a wide indistinct postmedial paler band, only defined on the disk. Hind wing yellow.

Hab. Ceylon. *Exp.* 52 millim.

SECT. II. Hind wing of male excised, folded, and lobed at anal angle; the branches of antennæ shorter.

A. *Hind wing with veins* 6 *and* 7 *stalked.*

1259. **Migoplastis hampsoni,** *Swinh. P. Z. S.* 1889, p. 402, pl. 43, fig. 2.

Differs from *correcta* in the head, thorax, and fore wing being rather browner; the band of the last better defined. Hind wing brownish fuscous, the outer area yellow in male; female with the

whole hind wing yellow. Abdomen fuscous in male and without spots.

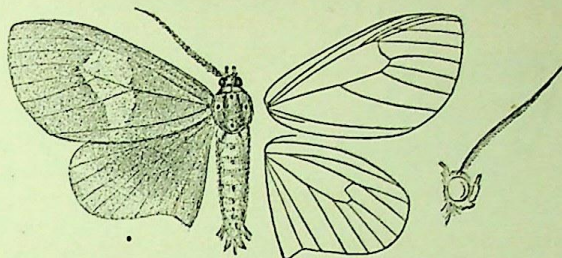



Fig. 20.—*Migoplastis hampsoni*, ♂. 1/1.

Hab. Nilgiri plateau. *Exp.* 58 millim.

B. (Dondera). *Hind wing with veins* 6 *and* 7 *from cell.*

1260. **Migoplastis alba**, *Moore, A. M. N. H.* (4) xx, p. 344; *Lep. Ceyl.* ii, pl. 98, fig. 3; *Hmpsn. Ill. Het.* ix, pl. 157, fig. 25; *C. & S.* no. 479.

Head and thorax yellowish white; vertex of head with a black dot; the spots on thorax as in the preceding species, except that the prothorax has a pair. Abdomen yellow, with a series of dorsal black bands and two paired series of lateral spots. Fore wing pure white. Hind wing with a slight fuscous tinge. Underside fuscous.

Hab. Ceylon. *Exp.*, ♂ 50, ♀ 52 millim.

Genus **DILEMERA**.

Deilemera, *Hübn. Verz.* p. 178 (1818).

Type, *D. evergista*, Stoll, from Amboina.

Range. N.E. India; Borneo; Amboina; Ternate.

Palpi upturned, the second joint reaching vertex of head, the third porrect. Antennæ pectinate in both sexes, the branches short in female. Tibiæ with the spurs short. Fore wing with the apex rather produced; the outer margin straight; vein 3 from before angle of cell, 5 from above it; 6 from upper angle or from above it; 7 and 10 from a long areole formed by the anastomosis of 8 and 9. Hind wing with vein 3 from before angle of cell, 5 from above it; 6 and 7 stalked; 8 from after middle of cell.

SECT. I. Hind wing of male with no fold on inner margin; the anal angle rounded.

1261. **Dilemera arctata**, *Wlk. Cat.* vii, p. 1664; *C. & S.* no. 460.
Nyctemera maculosa, *Wlk. Cat.* xxxi, p. 198; *C. & S.* no. 464.

Head, thorax, and abdomen yellow; head with black spots on

frons and vertex; collar, tegulæ, and thorax spotted with black; abdomen with short segmental bands above, and two pairs of lateral spots. Fore wing white, with some black spots near the base;

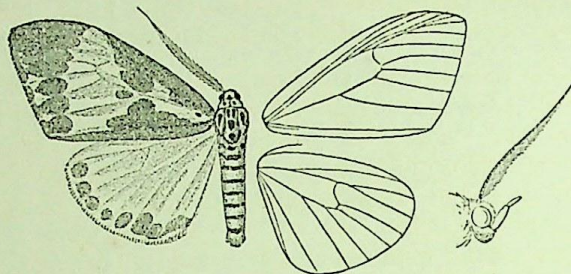



Fig. 21.—*Dilemera arctata*, ♂. 1/1.

broad fuscous streaks along costa and inner margin from the base to the medial maculate band; a broad marginal fuscous band of more or less conjoined streaks, in some specimens having white spots on the margin. Hind wing white, with a marginal series of rounded fuscous spots, those towards anal angle elongate.

Hab. Sikhim; Khásis; Nágas. *Exp.* 60 millim.

SECT. II. Hind wing of male with a very large fold on inner margin and the anal angle produced.

1262. **Dilemera carissima**, *Swinh. Trans. Ent. Soc.* 1891, p. 477, pl. 19, fig. 1.

♂. Differs from *arctata* in having paired dorsal black spots on abdomen instead of bands. Fore wing with a quadrate white submarginal spot below the apex; the fuscous markings of fore wing and submarginal series of hind wing very variable.

Hab. Sikhim; Khásis; Nágas. *Exp.* 56 millim.

Genus NYCTEMERA.

Nyctemera, *Hübn. Verz.* p. 178 (1818).
Leptosoma, *Boisd. Voy. de l'Astrolabe, Lép.* p. 197 (1832).
Trypheromera, *Butl. Ill. Het.* v, p. 45 (1881).
Zonosoma, *Butl. Ill. Het.* v, p. 44.
Pitasila, *Moore, P. Z. S.* 1877, p. 599.

Type, *N. lacticinia*, Cram.

Range. Africa; Madagascar; China; Philippines; Formosa; Indian, Malayan, and Australian regions; New Zealand.

Palpi porrectly upturned. Antennæ bipectinate in both sexes, the branches shorter in females. Fore wing with vein 3 from before the angle of cell, 5 from above it; 6 from upper angle, 7 and 10 from the short areole which is formed by the anastomosis of 8 and 9. Hind wing with vein 3 from before end of cell, 5 from angle or from above it; 6 and 7 stalked or from upper angle; 8 from before middle of cell.

Sect. I. Male without a tuft of hair on the tibia of fore leg.

1263. **Nyctemera lacticinia**, *Cram. Pap. Exot.* ii, pl. 128, fig. E; *Moore, Lep. Ceyl.* ii, p. 99, figs. 1, 1 *a* (larva); *C. & S.* no. 463.

Head, collar, and thorax yellowish white, spotted with black; abdomen white, the extremity yellow; three black spots on the first segment and slight black bands on the next six above; two paired series of lateral black spots. Fore wing hair-brown; a broad white streak on base of inner margin; an oblique postmedial band of five white spots. Hind wing white; a broad marginal brown band with irregularly curved inner edge.

Larva dull red; a dorsal and two lateral series of radiating tufts of fine black hairs arising from black tubercles; two long forwardly projecting tufts on 1st somite.

Pupa red-brown, in a rolled-up leaf.

Hab. China; throughout India, Ceylon, and Burma; Java; Ceram. *Exp.*, ♂ 42, ♀ 46–48 millim.

1264. **Nyctemera latistriga**, *Wlk. Cat.* ii, p. 397; *Moore, Lep. Ceyl.* ii, pl. 99, fig. 2; *C. & S.* no. 472.
Nyctemera inconstans, *Voll. Tijds. Dierk.* i, p. 47 (1863).
Nyctemera arcuatum, *Voll. Tijds. Dierk.* i, p. 45.
Nyctemera regularis, *Snelleman, Mid.-Sum., Lep.* p. 34 (1880).

Differs from *lacticinia* in having the broad white streak on base of inner margin of fore wing replaced by narrow streaks on costa, vein 1, and inner margin, and by a very broad streak below the median nervure; the postmedial band of spots with the upper two conjoined, the fourth very large, and fifth absent.

Hab. Throughout India, Ceylon, and Burma; Andamans; Sumatra; Borneo; Java. *Exp.*, ♂ 44, ♀ 46 millim.

1265. **Nyctemera tripunctaria**, *Linn. Mus. Lud. Ulr.* p. 392; *C. & S.* no. 466.
Nyctemera atralba, *Hübn. Verz.* p. 178.

Differs from *latistriga* in the abdomen having black spots on the vertex instead of bands; fore wing with the streaks below the median nervure, on vein 1, and on inner margin being much longer; the postmedial spots conjoined into a regular band; hind wing with the inner edge of the marginal band evenly curved and waved.

Hab. Assam; Malacca; Singapore. *Exp.* 50–54 millim.

1266. **Nyctemera plagifera**, *Wlk. Cat.* ii, p. 400; *Butl. Ill. Het.* v, pl. 88, fig. 3; *C. & S.* no. 471.

Head, thorax, and abdomen marked as in *tripunctaria*, except that the tegulæ have three black spots instead of a spot and streak.

Fore wing with the costa dark at base; the subcostal, median, and submedian nervures outlined in black as far as the very irregular medial band; an irregular band on discocellulars sending streaks along the veins to the marginal band, which extends from the

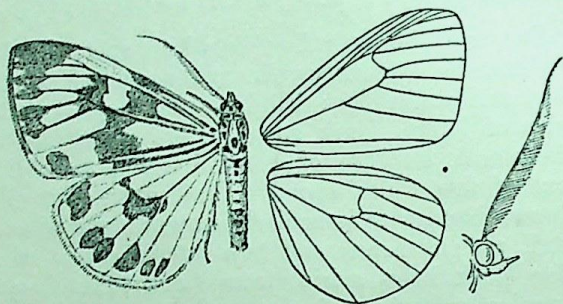



Fig. 22.—*Nyctemera plagifera*, ♂. 1/1.

costa to vein 3, and has a dentate inner edge and three or four white marginal spots; a black spot near outer angle. Hind wing white, with an irregular black blotch at lower angle of cell and five black submarginal spots.

Hab. China and throughout India. *Exp.* 58 millim.

1267. **Nyctemera cenis**, *Cram. Pap. Exot.* ii, pl. 147, fig. E; *C. & S.* no. 461.
Nyctemera interlecta, *Wlk. Cat.* ii, p. 400; *Butl. Ill. Het.* v, pl. 88, fig. 2; *C. & S.* no. 473.

Head black, the frons yellow, with a black spot at centre; thorax orange, spotted with black; abdomen orange, banded with black above, two lateral paired series of black spots. Fore wing white; two black subbasal spots and a streak below vein 1 and two below the median nervure; a medial series of six irregularly placed spots, the spot between veins 2 and 3 small; a series of longitudinal streaks on the margin often more or less conjoined into a band. Hind wing white; a spot at centre of costa, and a marginal conjoined series interrupted at vein 5 and below vein 2.

Hab. Himalayas from Simla to Sibságar; Khásis; Nágas; Yunnan. *Exp.* 48 millim.

1268. **Nyctemera varians**, *Wlk. Cat.* ii, p. 400; *C. & S.* no. 469.
Pitasila moolaica, *Moore, P. Z. S.* 1878, p. 847, pl. 53, fig. 10; *C. & S.* no. 468.

Head yellow; thorax and abdomen yellowish white, spotted with black; tegulæ with two black spots; abdomen with dorsal and ventral series of black spots and two paired lateral series. Fore wing white; two black spots near the base; the black markings extremely irregular and variable, forming very ill-defined subbasal, antemedial, postmedial, submarginal, and marginal bands,

all of which are interrupted, the last two coalescing in places. Hind wing white; two spots on the costa, one at origin of vein 2, and four or five on outer margin; the upper spot irregular; the two near anal angle smaller and often coalescing; other small spots may also be present.

Hab. Sikhim; N.E. India and Burma. *Exp.* 56–62 millim.

1269. **Nyctemera selecta,** *Wlk. Cat.* ii, p. 399.
Nyctemera bipunctella, *Wlk. Cat.* xxxv, p. 1880.
Nyctemera abraxoides, *Wlk. Journ. Linn. Soc.* vi, p. 93.
Pitasila disrupta, *Butl. A. M. N. H.* (5) xix, 1887, p. 223.
Nyctemera leucospilota, *Moore, P. Z. S.* 1887, p. 599, pl. 59, fig. 7; *C. & S.* no. 467.

Differs from *varians* in the abdomen being yellow only at the extremity. Wings with the markings deeper black. Fore wing with the whole apical and outer areas black, with three or four white spots, and connected with the antemedial band by a streak along the median nervure. Hind wing with a broad black marginal band with waved inner edge, and with apical, subapical, and medial white spots.

The spots on vertex of abdomen are sometimes absent, occasionally those towards the extremity become short bands.

Hab. Andamans; Philippines; Borneo; Solomons. *Exp.*, ♂ 50, ♀ 54 millim.

1270. **Nyctemera variolosa,** *Feld. Reis. Nov.* pl. 129, fig. 15; *C. & S.* no. 470.

Differs from *selecta* in the head, thorax, and abdomen being without the yellow tinge; abdomen with broad black bands above. Fore wing with the two antemedial bands more regular and complete; a postmedial band from vein 2 to inner margin; the marginal black area narrower, with more white spots on it. Hind wing with the marginal black band broken up into extremely irregular spots.

Hab. Andamans. *Exp.* 48 millim.

Sect. II. Male with a large tuft of hair arising from the base of tibia of fore leg.

1271. **Nyctemera coleta,** *Cram. Pap. Exot.* iv, pl. 368, fig. H; *C. & S.* no. 462.
Nyctemera nigrovenosa, *Moore, P. Z. S.* 1879, p. 394; *id. Lep. Ceyl.* ii, pl. 98, figs. 4, 4 *a* (larva); *C. & S.* no. 465.

Differs from *tripunctaria* in the lower three spots of the postmedial band of fore wing being separated and having another spot below them towards outer angle; cilia white below the apex and at outer angle. Hind wing with the cilia white below the apex, and in most specimens at anal angle.

The form *nigrovenosa* from Ceylon has veins 3 and 4 of the hind wing black, and the spots of the postmedial band of fore wing smaller.

Larva hairy; purple, the anterior somites yellowish; each somite black, marked with short dorsal and lateral white streaks.

Pupa yellow, spotted with black.

Hab. Assam; Ceylon; Burma; Malacca; Java; Ceram. *Exp.* 50–58 millim.

Genus SECUSIO.

Secusio, *Wlk. Cat.* ii, p. 558 (1854).

Type, *S. strigata*, Wlk.

Range. E. Africa; Natal; Aden; S. India.

Palpi long and porrectly upturned. Antennæ bipectinate in male, ciliated in female. Fore wing with vein 3 from before angle of cell, 5 from above it; 6 from upper angle; 7 from after the areole, which is very short and gives off 10. Hind wing with vein 2 from before angle of cell, 5 from above it; 6 and 7 stalked; 8 from after middle of cell.

1272. **Secusio strigata,** *Wlk. Cat.* ii, p. 559.
Secusio parvipuncta, *Hmpsn. Ill. Het.* viii, p. 46, pl. 139, fig. 6.
Nyctemera hymenæa, *Gerst. Arch. f. Nat.* xxxvii, p. 360, and *Van d. Decken, Reisen,* iii, (2) p. 377, pl. xvi, fig. 1.

♂. Head and collar orange, the former with a fuscous mark on vertex, the latter with two fuscous spots; thorax fuscous, streaked with white near the base; a medial series of four white spots,

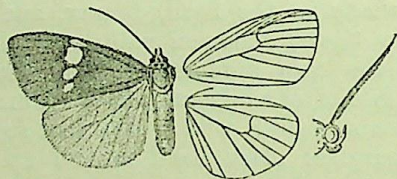



Fig. 23.—*Secusio strigata*, ♂. 1/1.

which are larger in the Natal form *strigata* than in *parvipuncta* from E. Africa, Aden, and S. India. Abdomen and hind wing orange.

♀ with an extra white spot in the series on fore wing between veins 3 and 4.

Hab. Natal; E. Africa; Aden; S. India. *Exp.*, ♂ 40, ♀ 32–40 millim.

Genus ARGINA.

Argina, *Hübn. Verz.* p. 167 (1818).

Type, *A. cribraria*, Clerck.

Range. Africa; Mauritius; China; throughout India, Ceylon, and Burma; Andamans; New Guinea; Australia.

Palpi upturned, reaching the vertex of head, the 3rd joint short. Antennæ ciliated in both sexes. Mid and hind tibiæ with minute terminal pairs of spurs. Hind wing of male with a fold on inner margin containing a glandular patch near the base, with a tuft of long hair beyond it; the anal angle produced to a point. Fore wing with veins 3, 4, 5 from close to angle of cell; 6 from upper angle; 7 and 10 from a long areole formed by the anastomosis of 8 and 9. Hind wing with veins 3, 4, 5 from the angle of cell; 6 and 7 from upper angle; 8 from middle of cell.

1273. **Argina argus**, *Koll. Hügel's Kaschmir*, iv, p. 467, pl. 21, fig. 3; *Moore, Lep. Ceyl.* ii, pl. 105, figs. 1 *a, b, c* (larva); *C. & S.* no. 741.

Head, thorax, and fore wing scarlet or brownish red; two black yellow-ringed spots on collar, two on tegulæ, and three on thorax; the collar outlined with brilliant scarlet; abdomen scarlet, with dorsal, ventral, and two paired lateral series of black spots. Fore wing with six transverse series of yellow-ringed black spots, each series curved, irregularly disposed and variable as to size and number, the postmedial series bifurcating towards the costa. Hind wing scarlet, with one black spot at end of cell, another at origin of vein 2, another at its middle, and a submarginal series; a few small spots on margin, all these being somewhat variable.

Larva purple-black, with a few dorsal hairs; head and a lateral line from 4th to 10th somites reddish; a dorsal series of transverse white streaks.

Hab. Throughout India, Ceylon, and Burma. *Exp.*, ♂ 55, ♀ 64 millim.

1274. **Argina syringa**, *Cram. Pap. Exot.* i, pl. v, fig. C; *Moore, Lep. Ceyl.* ii, pl. 105, figs. 2, 2 *a, b, c* (larva); *C. & S.* no. 749.
Bombyx crotalariæ, *Fabr. Ent. Syst.* iii, p. 473.

Differs from *argus* in the head, thorax, and fore wing being pale pinkish brown; the spots larger and more prominent, those on the fore wing being placed on clouded fuscous bands. Abdomen and hind wing crimson.

Larva purplish grey with sparse hairs; series of black dorsal transverse bands and lateral spots; head red.

Pupa in a thin network cocoon.

Hab. Throughout India and Ceylon; Australia. *Exp.*, ♂ 60, ♀ 64 millim.

1275. **Argina cribraria**, *Clerck, Icon. Ins.* ii, pl. 54, fig. 4; *C. & S.* no. 743.
Phalæna astræa, *Drury, Ill. Exot. Ins.* ii, p. 11, pl. 6, fig. 3; *C. & S.* no. 742.
Bombyx pylotis, *Fabr. Syst. Ent.* p. 585; *C. & S.* no. 748.
Deiopeia dulcis, *Wlk. Cat.* ii, p. 569; *C. & S.* no. 744.
Argina guttata, *Rambur, Lép. And.* ii, p. 229; *C. & S.* no. 745.
Argina notata, *Butl. Trans. Ent. Soc.* 1877 p. 365; *C. & S.* no. 746.

Differs from *argus* and *cribraria* in the head, thorax, and fore wing being orange-yellow or whitish; abdomen and hind wing bright orange, the markings similar.

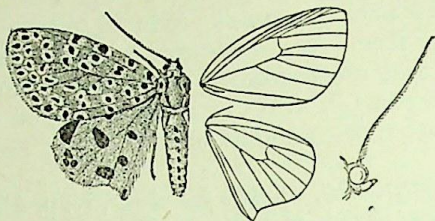



Fig. 24.—*Argina cribraria*, ♂. 1/1.

The form *dulcis* has the ground-colour of the head, thorax, and fore wing almost pure white; in *pardalina* it is pale yellow, the spots of the fore wing being placed on white bands; in *guttata* = *notata* = *astræa* the spots are larger and the ground-colour bright yellow; in *pylotis* the ground-colour is more orange, the spots clouded with yellow.

Hab. Mauritius; China; throughout India, Ceylon, and Burma; New Guinea. *Exp.*, ♂ 35–40, ♀ 35–50 millim.

Genus CUROBA.

Curoba, *Wlk. Cat.* xxxi, p. 272 (1864).

Type, *C. sangarida*, Cram.

Range. S. India and Ceylon.

Palpi porrect, the third joint of moderate length. Antennæ bipectinate in male, the branches short, serrate in female. Fore wing with vein 3 from before angle of cell, 5 from just above angle; 6 from upper angle; 7 and 10 from a long areole formed by the anastomosis of 8 and 9. Hind wing with vein 3 from some way before angle of cell; 5 from above the angle; 6 and 7 from upper angle; 8 from middle of cell. Hind tibiæ with two pairs of spurs.

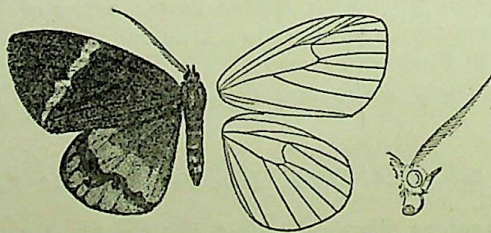



Fig. 25.—*Curoba sangarida*, ♂. 1/1.

1276. **Curoba sangarida**, *Cram. Pap. Exot.* iv, pl. 381, fig. D; *C. & S.* nos. 478, 781.
Phalæna mopsa, *Drury, Ill. Exot. Ins.* iii, pl. iii, fig. 3; *C. & S.* no. 779.
Curoba fasciata, *Wlk. Cat.* xxxi, p. 272.

Head and thorax brown; collar outlined with crimson; abdomen crimson, with brown segmental bands above and two paired series of lateral spots. Fore wing black-brown; an irregular yellowish-white band from the costa before the middle to outer angle; cilia tipped with white. Hind wing crimson; the basal area brown; a broken irregular postmedial band of black spots; outer margin brown, sending streaks along the veins towards the spots.

Hab. Nilgiris; Ceylon. *Exp.* 48 millim.

Genus CASTABALA.

Castabala, *Wlk. Cat.* xxxi, p. 270 (1864).

Type, *C. roseata*, Wlk.

Range. Sikhim; Calcutta.

Palpi short and porrectly upturned. Antennæ ciliated in male. Tibiæ with the spurs short. Fore wing elongate, the apex rounded; the outer margin oblique; vein 3 from before angle of cell; 4 and 5 on a short stalk; 6 from upper angle; 7, 8, 9 stalked; no areole. Hind wing with vein 3 from before angle of cell; 4 and 5 on a short stalk; 6 and 7 stalked; 8 from near end of cell.

1277. **Castabala roseata**, *Wlk. Cat.* xxxi, p. 270; *Butl. Ill. Het.* v, pl. 87, fig. 1; *C. & S.* no. 729.

Head and collar crimson; antennæ brown; thorax brown with a bluish tinge; metathorax suffused with crimson; abdomen crimson. Fore wing dark brown, the base bluish; a yellow patch

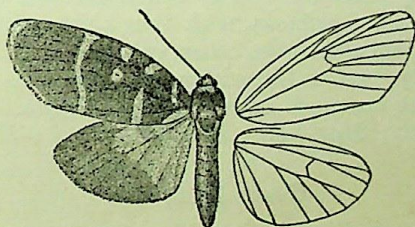



Fig. 26.—*Castabala roseata*, ♂. 1/1.

on inner margin at base; a subbasal yellow band from the costa; an antemedial yellow band interrupted at cell; a medial spot on costa and another in cell; a postmedial curved band and marginal band widest at apex. Hind wing crimson, with a broad marginal dark brown band not reaching anal angle.

Hab. Sikhim; Calcutta. *Exp.* 52 millim.

Genus TATARGINA.

Tatargina, *Butl. Trans. Ent. Soc.* 1877, p. 366.

Type, *T. picta*, Wlk.
Range. S. China; Burma.
Palpi rather short and porrect. Antennæ simple in female. Mid and hind tibiæ with minute terminal pairs of spurs. Fore wing with vein 3 from before angle of cell; 4 and 5 on a short stalk; 6 from upper angle; 7, 8, 9, 10 stalked. Hind wing with veins 3, 4, 5 from close to lower angle of cell; 6 and 7 from upper angle; 8 from middle of cell.

1278. **Tatargina picta**, *Wlk. Cat.* xxxi, p. 263; *C. & S.* no. 750.
Tatargina formosa, *Butl. Trans. Ent. Soc.* 1877, p. 366, pl. viii, fig. 17.

♀. Head and thorax scarlet; collar with two whitish patches, with a black spot centred with grey on each; tegulæ, meso- and metathorax with similar patches; abdomen yellow, red at base,

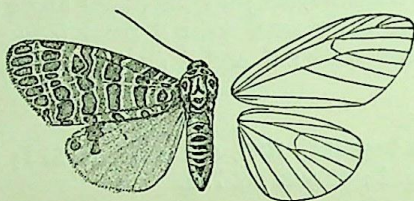



Fig. 27.—*Tatargina picta*, ♀. ½.

with dorsal and lateral series of black spots and black ventral bands. Fore wing grey, crossed by six scarlet bands, each on a white ground edged by black; the veins white, outlined with black; cilia scarlet. Hind wing crimson, with four black spots on the costa near the apex, and sometimes other subapical and discal spots.
In the variety *formosa* the crimson and white black-edged bands of the fore wing are much narrower than in *picta*.
Hab. S. China; Moulmein; Prome. *Exp*. 54–58 millim.

Genus DEIOPIA.

Deiopeia, *Steph. Ill. Brit. Ent., Haust.* ii, p. 92 (1829).
Utetheisa, *Hübn. Verz.* p. 168 (1818), gen. non descr.

Type, *D. pulchella*, Linn.
Range. Universally distributed.
Palpi porrect, extending beyond the frons. Antennæ ciliated. Fore wing long and narrow, the outer margin short and somewhat erect; vein 3 from before angle of cell; 4 and 5 from the angle; 6 from upper angle; 7 and 10 from a short areole. Hind wing with vein 5 from above angle of cell: 6 and 7 from upper angle; 8 from middle of cell.

SECT. I. Hind wing of male with no fold or glandular tuft on inner margin.

1279. **Deiopia pulchella**, *Linn. Syst. Nat.* 1.ii, 884; *Kirby, Eur. Butt. & Moths*, p. 102, pl. 22, figs. 12, 12 *a* (larva); *C. & S.* no. 739.
Phalæna lotrix, *Cram. Pap. Exot.* ii, pl. 109, fig. E; *C. & S.* no. 738.
Deiopeia thyter, *Butl. Trans. Ent. Soc.* 1877, p. 361; *C. & S.* no. 740.
Noctua pulchra, *Esp. Schmett. Eur.* vi, p. 570.
Deiopeia antennata, *Swinh. A. M. N. H.* (6) xii, p. 215.

Head and thorax yellow, the collar and tegulæ each with two black spots, pro-, meso-, and metathorax with one each; the third joint of palpi black; abdomen white. Fore wing white, with five

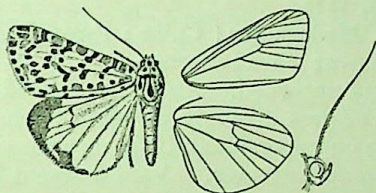



Fig. 28.—*Deiopia pulchella*, ♂. ½.

interrupted scarlet bands with series of black spots between them; a marginal series of black spots. Hind wing semi-diaphanous white; some specimens with black marks on the discocellulars; a very irregular black submarginal band, broad at apical area and between veins 1 *b* and 3.

The form *lotrix* has the third joint of the palpi yellow, and the black spots on thorax reduced; *thyter* has the black spots on fore wing also reduced to minute specks. The Malayan and Australian form *antennata* has the antennæ of male serrate, sometimes almost forming pectinations; it occurs from the Nicobars and Philippines eastward.

Larva dark grey, with a dorsal white band and subdorsal series of red spots; head yellow.

Hab. Europe; Africa; throughout India and Ceylon; Philippines; Malay Archipelago; New Guinea; Australia and the Pacific groups. *Exp.*, ♂ 40–46, ♀ 45 millim.

SECT. II. Hind wing of male with a fold and glandular tuft on inner margin.

1280. **Deiopia venusta**, *Hübn. Samml. exot. Schmett.* p. 29, no. 261, figs. 521, 522.
Deiopeia cruentata, *Butl. Ill. Het.* v, p. 38, pl. 86, fig. 10; *C. & S.* no. 737.

Differs from *pulchella* in the palpi being black with a yellow band; the head black, with a white spot on vertex; the black spots of the thorax larger. Fore wing with the ground-colour black

the red spots being placed on white patches; an oblique white irregular postmedial band. Hind wing with the irregular marginal black band wider.

In the form *cruentata* the spot on head and the ground-colour of thorax are yellow; the red spots of the fore wing are smaller and placed on yellowish-white instead of pure white patches.

Hab. Madagascar; Mauritius; Sikhim; Sumatra. *Exp.*, ♂ 40, ♀ 50–54 millim.

Genus CYANA.

Cyana, *Wlk. Cat.* ii, p. 528 (1854).
Doliche, *Wlk. Cat.* ii, p. 529.
Bizone, *Wlk. Cat.* ii, p. 548.
Chionœma, *Herr.-Schäffer, Samml. aussereur. Schmett.* p. 21 (1850).

Type, *C. detrita*, Wlk.

Range. Africa; Madagascar; China; throughout India, Ceylon, and Burma; Sumatra; Java; Borneo.

Palpi slender and upturned. Antennæ ciliated. Fore wing of male with a more or less strongly developed fringe of hair from the centre of costa on upperside and lobe on underside, which much distorts the subcostal nervures. Vein 5 absent in male; vein 6 usually absent in female; 7, 8, 9 stalked. Hind wing with veins 3 and 4 stalked; 5 from above angle of cell; 6 and 7 usually stalked.

SECT. I. Fore wing in female with veins 4 and 5 stalked; male with the costal tuft large; the lobe single, elongate, and large.

A. *Fore wing with vein 6 absent in female. Hind wing with veins 6 and 7 from angle of cell.*

a. *Fore wing of male with three black spots, of female with one.*

a′. *Male with a large patch of modified chocolate scales on disk of fore wing on underside, a similar patch in upper part of cell of hind wing on upperside, the costa being highly arched.*

1281. **Cyana peregrina**, *Wlk. Cat.* ii, p. 551; *C. & S.* no. 668.
Bizone quadrinotata, *Wlk. Char. Undescr. Het.* p. 90; *C. & S.* no. 671.
Lithosia alborosea, *Wlk. Cat.* xxxi, p. 230; *C. & S.* no. 656.
Bizone pallens, *Butl. Trans. Ent. Soc.* 1877, p. 338; *C. & S.* no. 667.
Bizone puella, *Moore, Lep. Ceyl.* ii, p. 103, figs. 3, 3 *a* (nec *Drury*).

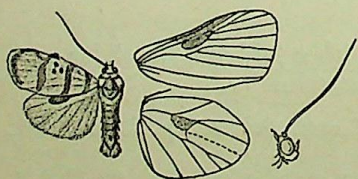



Fig. 29.
Cyana peregrina, ♂. ½.

Palpi crimson; head and thorax white; one scarlet band on collar and two on thorax; abdomen with a crimson tinge. Fore wing white; a subbasal scarlet band; ante- and postmedial nearly straight oblique bands, the former inwardly edged with black, the latter outwardly; a marginal crimson band, which in the male is continued along the costa to the postmedial band. Hind wing pale crimson.

In the form *pallens* the black edges to the ante- and post-medial bands are obsolete; the markings of an orange tone; the hind wing very pale.

Larva forms a large cocoon of extremely open network.

Hab. China; throughout India, Ceylon, and Burma; Sumatra. *Exp.*, ♂ 23, ♀ 30 millim.

b′. *Male without sexual patches or arched costa of hind wing.*

1282. **Cyana puella,** *Drury, Ill. Exot. Ins.* ii, p. 3, pl. 2, fig. 2; *C. & S.* no. 670.

Differs from *peregrina* in having the antemedial band of fore wing excurved below the costa; the postmedial band incurved and somewhat irregular.

Hab. Dharmsála; Nepal; Bombay; S. India; Ceylon; Java. *Exp.*, ♂ 28, ♀ 36 millim.

b. *Fore wing of male with three red spots, female with one.*

1283. **Cyana amabilis,** *Moore, P. Z. S.* 1877, p. 597, pl. 59, fig. 2; *C. & S.* no. 657.

Differs from *peregrina* in the antemedial band of the fore wing being further from the base and more erect; the ante- and post-medial bands without black edges.

Hab. Andamans; Nicobars. *Exp.* 22 millim.

B. *Fore wing with vein* 6 *present in female; hind wing with the costa normal; no modified patch of scales; veins* 6 *and* 7 *stalked.*

1284. **Cyana effracta,** *Wlk. Cat.* ii, p. 546; *C. & S.* no. 663.

Head, thorax, and abdomen white, thorax with an orange band; end of abdomen in female with a large ochreous tuft. Wings white; fore wing with subbasal and antemedial nearly straight orange bands; a spot in the cell; a slightly curved medial band; three orange spots in end of cell; a highly curved postmedial band; four submarginal spots.

Hab. Nepal; Sikhim; Burma. *Exp.* 27 millim.

SECT. II. Fore wing in female with veins 4 and 5 from cell; 7, 8, 9 stalked.

A. *Male with the costal tuft large; the fold large and bilobate.*

a. *Fore wing with one black spot in both sexes.*

1285. **Cyana perornata,** *Wlk. Cat.* ii, p. 548; *Butl. Ill. Het.* v, pl. 86, fig. 8; *C. & S.* no. 669.

Differs from *peregrina* in the fore wing having in some specimens a complete irregular marginal band, whilst in others it is reduced

to some subapical streaks; male with some scarlet between the postmedial band and apex. Hind wing white, the outer area, and in some specimens the whole wing, more or less tinged with pink.

Hab. Sikhim; Assam; Borneo; Java. *Exp.*, ♂ 48, ♀ 54 millim.

b. *Fore wing of male with three black spots, of female with two.*

1286. **Cyana bianca**, *Wlk. Cat.* vii, p. 1684; *C. & S.* no. 660.

Differs from *peregrina* in the scarlet bands of the fore wing being much broader; the black edges to the ante- and postmedial bands broad and prominent; the black spots large and prominent. Hind wing deeper crimson.

In a female from the Karen Hills the crimson bands of the fore wing are not wider towards inner margin, and in a female from Bhámo all the crimson markings are replaced by orange.

Hab. Sikhim; Cachar; Burma; Penang; Andamans. *Exp.* 40 millim.

c. *Fore wing with three black spots in both sexes.*

1287. **Cyana subornata**, *Wlk. Cat.* ii, p. 550; *Moore, Lep. Ceyl.* ii, pl. 103, fig. 4; *C. & S.* no. 673.
Bizone linatula, *Swinh. Trans. Ent. Soc.* 1891, p. 135.

♀. The markings as in *peregrina*.

The variety *linatula* has slender black edges to the ante- and postmedial bands.

Hab. Khandála; Matheran; N. Canara; Ceylon; Andamans; Borneo. *Exp.* 36 millim.

B. *Male with the costal tuft large; the fold very large and trilobate.*

a. *Fore wing with three black spots in both sexes.*

1288. **Cyana candida**, *Feld. Reis. Nov.* pl. 106, fig. 17; *C. & S.* no. 731.

Pure white; collar with a crimson band; tegulæ and vertex of thorax with crimson spots. Fore wing without bands; the basal half of costa streaked with crimson. Hind wing pure white.

In a female from Kulu, N.W. Himalayas, the crimson spots on tegulæ and thorax are absent; and in another from Dalhousie the band on collar is also absent, the costal band on fore wing almost obsolete, as also the black spot at lower angle of cell.

Hab. N.W. Himalayas; Sikhim, 8000 to 10,000 feet. *Exp.*, ♂ 40, ♀ 48 millim.

1289. **Cyana signa**, *Wlk. Cat.* ii, p. 550; *C. & S.* no. 672.
Bizone fasciculata, *Wlk. Cat.* vii, p. 1684; *C. & S.* no. 664.
Bizone adita, *Moore, Lep. E. I. Co.* p. 306, pl. 7 *a*, fig. 11.
Bizone signa, *var.* walkeri, *Elw. P. Z. S.* 1890, p. 393, pl. 32, fig. 7.

♂. Pure white; palpi black; collar and tegulæ with narrow crimson bands; a small spot on vertex of thorax. Fore wing with a basal crimson spot on costa; a narrow obliquely curved antemedial band, the costa crimson from the base to the band; a postmedial curved narrow band; a black spot towards end of cell and one in each angle, the two latter being conjoined into a streak in one specimen; the costal fold on underside ochreous or pink.

♀. Without the crimson streak on base of costa; the lower black spot at origin of vein 3 instead of at angle of cell; the postmedial band angulated as well as curved; in some specimens the black spots are reduced to specks, one specimen having the spot at upper angle of cell only.

The form *fasciculata* has the markings of an orange tone, whilst in *adita* they are crimson. The variety *walkeri*, Elwes (male unknown), from Sikhim, has a crimson band on metathorax, the bands of fore wing broader, the postmedial band doubly curved instead of angled, the black spots large, and the subbasal band more complete.

Hab. Himalayas, from Kulu to Sikhim, 7000 to 10,000 feet; Khásis; Burma. *Exp.*, ♂ 44, ♀ 46 millim.

b. *Fore wing of male with three black spots, of female with two spots.*

1290. **Cyana puer,** *Elwes, P. Z. S.* 1890, p. 392, pl. 32, fig. 8.

Head and abdomen white; thorax buff, striped with white; Fore wing white; the basal and outer areas buff; an antemedial scarlet angulated band; a postmedial nearly straight and slightly oblique band, outwardly edged with black; a black spot on the costa beyond the postmedial band. Hind wing buff.

Hab. Sikhim; Khásis; Nágas; Manipur. *Exp.* 40 millim.

1291. **Cyana guttifera,** *Wlk. Cat.* vii, p. 1779; *C. & S.* no. 666.
Bizone triguttata, *Wlk. Char. Undescr. Het.* p. 89; *C. & S.* no. 674.

Differs from *arama* in having the distal segments of abdomen ochreous; the antemedial band of fore wing less bent outwards towards inner margin; the postmedial band more so. Hind wing yellow; the costal area and cilia white.

Hab. N.W. Himalayas; Sikhim; Nágas; Khandála; Andamans. *Exp.* 32 millim.

1292. **Cyana sikkimensis,** *Elwes, P. Z. S.* 1890, p. 395.

Differs from *guttifera* in having the costa streaked with black at base; the upper black spot divided by the postmedial band; no marginal band; the hind wing white.

Hab. Sikhim, 7000 to 10,000 feet. *Exp.*, ♂ 42, ♀ 46 millim.

1293. **Cyana divakara,** *Moore, P. Z. S.* 1865, p. 798, pl. 43, fig. 9; *C. & S.* no. 662.

Head, thorax, and abdomen white; collar and tegulæ banded with orange; thorax with two orange spots. Fore wing white, with brownish-orange markings which occupy the whole wing except a basal patch which extends along the inner margin to near the centre; a streak on the subcostal nervure; a patch at end of cell on which are the three black spots, the two on the discocellulars being conjoined; a spot at centre of inner margin; the costal tuft white, with an irregular band from it to inner margin and a black speck below it; cilia and hind wing white. Underside white; the costal and outer areas of fore wing suffused with fuscous; a dark lunule at end of cell of hind wing.

Hab. Sikhim. *Exp.*, ♂ 48, ♀ 36 millim.

c. *Fore wing of male with two black spots, female with three.*

1294. **Cyana molleri,** *Elwes, P. Z. S.* 1890, p. 395.

Differs from *dohertyi* in being without the dark lunule at end of cell of hind wing on underside.

Hab. Sikhim; Khásis. *Exp.* 38 millim.

d. *Fore wing in both sexes with three fuscous ring-spots in the cell.*

1295. **Cyana detrita,** *Wlk. Cat.* ii, p. 529; *Butl. Ill. Het.* v, pl. 86, fig. 9; *C. & S.* no. 655.
Barsine suffundens, *Wlk. Cat.* xxxi, p. 250; *C. & S.* no. 707.

Head, thorax, and abdomen white suffused with fuscous. Fore wing white, irrorated with fuscous and with ill-defined and much diffused subbasal, antemedial, postmedial, and submarginal fuscous bands; the three fuscous ring-spots filled in with white, the upper spot obsolescent in male, and usually filled in with black in female. Hind wing white.

Hab. Himalayas; Silhet; Nága Hills. *Exp.*, ♂ 28, ♀ 38 millim.

1296. **Cyana gelida,** *Wlk. Cat.* ii, p. 529; *Butl. Ill. Het.* v, pl. 86, fig. 6; *C. & S.* no. 654.

Head, thorax, and abdomen white; thorax and abdomen much suffused with fuscous. Fore wing white, with a subbasal yellow or olive band with some fuscous suffusion before and beyond it; ante- and postmedial curved yellow or olive bands, the inner area between them similarly coloured; the ring-spots on a fuscous clouded area which extends beyond the postmedial band; an irregular marginal vinous-red band, not reaching the apex. Hind wing pink with a vinous tinge.

Hab. Kángra; Sikhim; Silhet. *Exp.* 32–36 millim.

C. *Male with the costal tuft very minute; the fold minute and unilobate.*

a. *Male with three black spots in the cell.*

1297. **Cyana bellissima,** *Moore, P. Z. S.* 1878, p. 27, pl. iii, fig. 13; *C. & S.* no. 659.

♂. Head and collar white, the latter fringed with crimson; thorax and abdomen crimson. Fore wing pinkish; a crimson subbasal band ending at vein 1; an antemedial broad crimson oblique band widest at inner margin; a similar curved postmedial band; a black subcostal streak beyond the postmedial band; the outer area buff. Hind wing bright crimson.

♀. The bands of the fore wing narrow; a narrow buff submarginal band instead of the whole outer area being buff; in a specimen from E. Pegu this band is crimson; hind wing with the apex, margin, and cilia white.

Hab. Mussooree; Sikhim; E. Pegu. *Exp.*, ♂ 46, ♀ 51–64 millim.

1298. **Cyana coccinea,** *Moore, P. Z. S.* 1878, p. 28, pl. iii, fig. 14; *C. & S.* no. 661.

♂. Head and collar ochreous, the latter fringed with crimson; thorax and abdomen crimson; the anal tuft ochreous. Wings dark crimson; fore wing with some black subbasal specks; a broad excurved antemedial band; an incurved submarginal band with dentate outer edge.

Hab. Sikhim. *Exp.* 53 millim.

1299. **Cyana harterti,** *Elwes, P. Z. S.* 1890, p. 398.

Differs from *guttifera* in having the black spots of the fore wing smaller; the yellow bands narrower. Hind wing pure white.

Hab. Upper Assam. *Exp.* 24 millim.

b. *Fore wing with three yellow conjoined spots in the cell in both sexes.*

1300. **Cyana gazella,** *Moore, P. Z. S.* 1872, p. 572, pl. 33, fig. 4; *C. & S.* no. 665.

Head, thorax, and abdomen white, the thorax much suffused with pale orange. Fore wing white; a short basal pale orange band; subbasal, antemedial, postmedial, and marginal bands connected by transverse spurs and the three conjoined cell-spots into reticulations. Hind wing white.

Hab. N.W. Himalayas; Sikhim. *Exp.*, ♂ 36, ♀ 48 millim.

D. *Male with the costal tuft small; the fold small and bilobate.*

a. *Fore wing with three black spots in both sexes.*

1301. **Cyana arama,** *Moore, Lep. E. I. Co.* p. 306, pl. vii. *a*, fig. 10; *C. & S.* no. 658.

White; the palpi black; collar and tegulæ banded with yellow; abdomen with the distal portion suffused with crimson. Fore wing with subbasal, antemedial, postmedial, and submarginal obliquely curved yellow bands; the three black spots large in female, smaller in male, the upper spot being placed outside the postmedial band below the costa. Hind wing white, more or less suffused with pale pink; a dark lunule at end of cell on underside.
Hab. Kulu; Sikhim; Khásis. *Exp.* 54 millim.

1302. **Cyana dohertyi,** *Elwes, P. Z. S.* 1890, p. 394, pl. 32, fig. 4.

Differs from *arama* in having the abdomen white; the antemedial band of fore wing less bent outwards towards inner margin; the postmedial band straighter; the upper black spot at angle of cell. Hind wing pure white, with a dark lunule at end of cell on underside.
Hab. Sikhim; Nága Hills. *Exp.* 40 millim.

Genus KERALA.

Kerala, *Moore, P. Z. S.* 1881, p. 329.

Type, *K. punctilineata*, Moore.
Range. Japan; Sikhim; Nága Hills.
Palpi rather long and obliquely porrect. Antennæ minutely ciliated. Fore wing long and narrow, the outer margin short and erect; veins 3, 4, 5 from close to angle of cell; 6 from upper angle; 7 from the short areole; 10 from after it. Hind wing with a patch of modified scales occupying the greater part of the disk; veins 3 and 4 stalked; 5 from above angle of cell; 6 and 7 stalked; 8 from middle of cell. Retinaculum from median nervure in both sexes.

1303. **Kerala punctilineata,** *Moore, P. Z. S.* 1881, p. 330; *C. & S.* no. 1641.
Kerala multipunctata, *Moore, Lep. Atk.* p. 93, pl. iv, fig. 4; *C. & S.* no. 1640.

♂. Head, thorax, and fore wing olive-green, the last with numerous dark specks on the veins; a speck of raised white scales in the cell; the discocellulars black, with raised white scales on their inner edge; the subcostal nervule streaked with red-brown; an indistinct antemedial double curved line; a postmedial oblique line bent outwards near inner margin; a submarginal lunulate black line; a slight marginal lunulate white line. Hind wing

whitish fuscous; the raised glandular scales brown. Abdomen whitish.

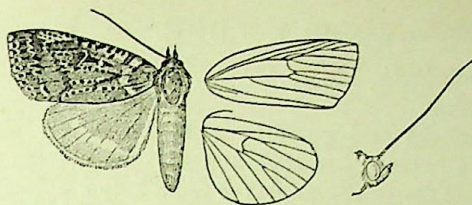



Fig. 30.—*Kerala punctilineata*, ♂. 1/1.

♀. Head reddish; thorax and abdomen fuscous white. Fore wing grey or without the raised white scales in cell and on discocellulars; the ante- and postmedial lines almost obsolete.

In a male from the Nága Hills the head, thorax, abdomen, and fore wing are suffused with pale red-brown.

Hab. Sikhim; Nága Hills. *Exp.* 40–42 millim.

Genus **DOHERTYA**, nov.

Type, *D. cymatophoroides*, Hmpsn.

Range. Burma.

Palpi short and porrect; antennæ minutely serrated; mid tibiæ with one pair of long spurs, hind tibiæ with two pairs. Fore wing long and narrow, the apex rounded; veins 4 and 5 from lower angle of cell, 6 from upper angle; 7, 8, 9, 10 stalked. Hind wing with veins 3 and 4 stalked; 5 absent; 6 and 7 stalked; 8 from beyond middle of cell.

1304. **Dohertya cymatophoroides**, n. sp.

♂. Head red-brown, the frons pale; thorax pale, the collar outlined with black; abdomen pale brown. Fore wing pale

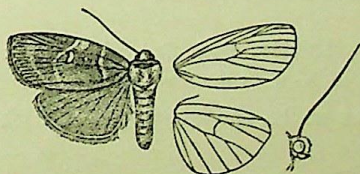



Fig. 31.—*Dohertya cymatophoroides*, ♂. 1/1.

reddish brown, the basal half darkest; an indistinct curved dark antemedial line; a whitish speck towards end of cell and lunule on discocellulars; traces of a pale curved postmedial line; a series of marginal dark specks. Hind wing fuscous.

Hab. E. Pegu (*Doherty*). *Exp.* 36 millim. Type in coll. Elwes.

Genus ADREPSA.

Adrepsa, *Moore, Lep. Atk.* p. 37 (1879).

Type, *A. stilbioides*, Moore.
Range. Assam.

♀. Palpi slight and porrect; antennæ nearly simple. Fore wing long and narrow, the apex acute; vein 3 from before angle of cell; 5 from above the angle; 6 from below upper angle; 7, 8, 9, 10 stalked. Hind wing with veins 3 and 4 stalked; 5 from above the angle; 6 and 7 stalked; 8 from middle of cell.

*1305. **Adrepsa stilbioides**, *Moore, Lep. Atk.* p. 38, pl. ii, fig. 20; *C. & S.* no. 732.

♀. Head and thorax dark purplish grey; thorax speckled with white; abdomen yellow. Fore wing dark purplish grey; a curved subbasal series of black spots; a spot in the cell and one at end of it; a curved postmedial series and marginal series, all edged with a few white specks. Hind wing pale yellow, with a series of marginal black striæ.

Hab. Assam. *Exp.* 48 millim.

Genus AGRISIUS.

Agrisius, *Wlk. Cat.* iii, p. 723 (1855).

Type, *A. guttivitta*, Wlk.
Range. Sikhim.

Palpi upturned, the second joint reaching vertex of head, the third long. Antennæ fasciculated. Fore wing with vein 3 from before angle of cell; 4 and 5 from the angle; 6 from upper angle; 7 from areole, 10 from after it. Hind wing with vein 3 from just before the angle of cell; 4 and 5 from the angle; 6 and 7 from upper angle; 8 from middle of cell.

1306. **Agrisius guttivitta**, *Wlk. Cat.* iii, p. 723; *Butl. Ill. Het.* v, pl. 87, fig. 2; *C. & S.* no. 545.

Head and thorax white, the latter spotted with black; the basal

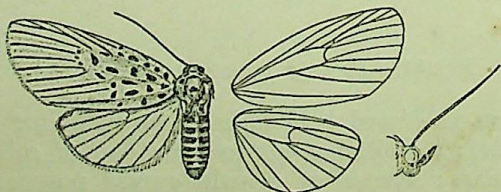



Fig. 32.—*Agrisius guttivitta*, ♂. 1/1.

segments of abdomen white, the distal segments black fringed

with pale hairs. Fore wing white; the basal half with numerous black spots; the veins of the outer area streaked with black. Hind wing white, slightly suffused with fuscous; the veins smoky black.

Hab. Sikhim. *Exp.* 46 millim.

1307. **Agrisius fuliginosus,** *Moore, P. Z. S.* 1872, p. 571, pl. 33, fig. 3; *C. & S.* no. 544.

Agrisius japonicus, *Leech, P. Z. S.* 1888, p. 598, pl. 30, fig. 10.

♀. Differs from *guttivitta* in being wholly suffused with pale fuscous. Fore wing with the spots confined to the basal one-fourth of wing, except for two medial spots below the costa, and six between the lower angle of cell and inner margin; the veins of outer area slightly streaked with black. Hind wing uniform fuscous.

Hab. China; "India." *Exp.* 56 millim.

Genus MACROBROCHIS.

Macrobrochis, *Herr.-Schäffer, Samml. aussereur. Schmett.* p. 72 (1856).
Tripura, *Moore, Lep. E. I. Co.* p. 298 (1858).

Type, *M. gigas*, Wlk.

Range. Himalayas; Assam; Nága Hills.

Palpi upturned, reaching vertex of head, and thickly scaled, the third joint short. Antennæ with the bristles long in male. Fore wing with vein 3 from before angle of cell; 4 and 5 from angle; 6 from upper angle or beyond it; 7 and 10 from the areole; 11 often anastomosing with 12. Hind wing with vein 3 from before angle of cell; 4 or 5 from the angle; 6 and 7 stalked; 8 from before middle of cell.

SECT. I. (*Macrobrochis*). Fore wing with vein 6 from beyond angle of cell.

1308. **Macrobrochis gigas,** *Wlk. Cat.* ii, p. 494; *Butl. Ill. Het.* v, pl. 87, fig. 4; *C. & S.* no. 556.

Macrobrochis interstitialis, *Herr.-Schäffer, Samml. aussereur. Schmett.* fig. 531.

Macrobrochis leucospilota, *Moore, P. Z. S.* 1878, p. 8; *C. & S.* no. 557.

Macrobrochis albicans, *Butl. Ill. Het.* v, p. 41, pl. 87, fig. 5; *C. & S.* no. 554.

Macrobrochis nigrescens, *Moore, P. Z. S.* 1878, p. 8; *C. & S.* no. 558.

Macrobrochis atrata, *Butl. Ill. Het.* v, pl. 87, fig. 3; *C. & S.* no. 555.

Head and collar orange; thorax black above with a metallic green tinge, orange below; the tegulæ striped with orange; abdomen greenish black, the extremity and ventral surface orange; a series of lateral white marks. Fore wing black with a green

tinge; a small white spot at base, with a larger one beyond it; a spot in end of cell and another below it; a streak between veins 2 and 3, and an irregular submarginal series. Hind wing with the basal half white, the outer half black.

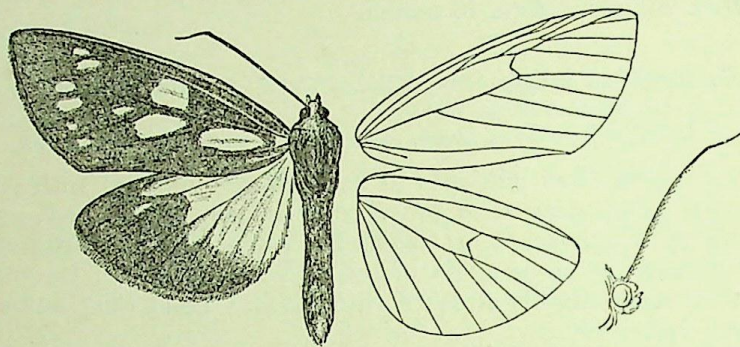



Fig. 33.—*Macrobrochis gigas*, ♂. ½.

The form *interstitialis* has a white subbasal streak on inner margin of fore wing and the white markings larger, the hind wing with some whitish streaks on the marginal black area; in *leucospilota* the white submarginal streaks of the hind wing are larger, and in *albicans* the submarginal series of fore and hind wings are very large and prominent; in *nigrescens* the white markings of both wings are very much reduced, and in *atrata* quite or almost absent.

Hab. Sikhim; Bhutan; Assam. *Exp.*, ♂ 80, ♀ 85 millim.

SECT. II. (*Tripura*). Fore wing with vein 6 from the angle of cell.

1309. **Macrobrochis prasena,** *Moore, Lep. E. I. Co.* p. 299, pl. 7 *a*, fig. 6; *C. & S.* no. 560.

Head, thorax, and abdomen blue-black; collar and underside orange. Fore wing blue-black; a basal white streak on inner margin; large patches in the interno-median interspace and end of cell; long streaks in the marginal interspaces. Hind wing white; the apical area black; a marginal black line.

Hab. Dalhousie; Dharmsála; Sikhim; Nága Hills. *Exp.* 58 millim.

1310. **Macrobrochis pallens,** n. sp.

Head and thorax greyish white; collar bright orange; abdomen purplish fuscous; thorax and abdomen orange below; legs blue-grey. Wings greyish white; fore wing with the basal half of costa narrowly blue-grey; disk of hind wing and veins clouded with fuscous.

Hab. Dalhousie; Simla (*Harford*). *Exp.*, ♂ 46, ♀ 54 millim. Type in B. M.

Genus SIDYMA.

Sidyma, *Wlk. Cat.* vii, p. 1686 (1856).
Vamuna, *Moore, P. Z. S.* 1878, p. 10.

Type, *S. albifinis*, Wlk.
Range. Himalayas; Khási Hills.

Palpi upturned, reaching vertex of head, the third joint short. Thorax and abdomen somewhat stout and hairy. Fore wing with vein 3 from before angle of cell, 4 and 5 stalked; 6 from middle of areole; 7 from after areole; 10 from the areole. Hind wing with vein 3 from before angle of cell; 4 and 5 stalked; 6 and 7 from upper angle; 8 from middle of cell.

SECT. I. (*Sidyma*). Male with the antennæ bipectinated, the branches fine and of moderate length.

1311. **Sidyma albifinis**, *Wlk. Cat.* vii, p. 1686; *C. & S.* no. 561.

Head, thorax, and abdomen fuscous; collar, underside of thorax,

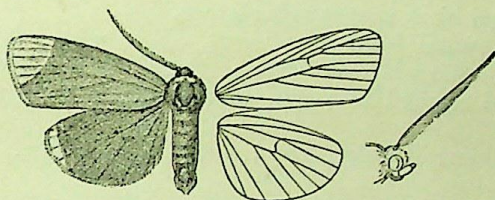



Fig. 34.—*Sidyma albifinis*, ♂. ½.

and anal tuft ochreous. Wings fuscous; the apical area of both wings white.

Hab. N.W. Himalayas. *Exp*., ♂ 42, ♀ 45 millim.

1312. **Sidyma apicalis**, *Moore, P. Z. S.* 1878, p. 9, pl. 1, fig. 2; *C. & S.* no. 662.

Differs from *albifinis* in being purplish black; the head, collar, and underside of thorax orange-red; the apical white patch of fore wing smaller, of hind wing absent.

Hab. Sikhim. *Exp*. ♂ 42, ♀ 44 millim.

SECT. II. (*Vamuna*). Male with the antennæ ciliated.

1313. **Sidyma beema**, *Moore, P. Z. S.* 1865, p. 798; *C. & S.* no. 615.

Palpi orange, the terminal joint brown. Head, thorax, and fore wing uniform hair-brown; abdomen brown, with the extremity yellow. Hind wing with the inner half brown; the costal and apical areas yellow; a marginal yellow band extending to anal angle.

Hab. Sikhim. *Exp*., ♂ 47, ♀ 56 millim.

1314. **Sidyma maculata,** *Moore, P. Z. S.* 1878, p. 10, pl. 1, fig. 5; *C. & S.* no. 564.

♂. Head, thorax, and abdomen pale ochreous; palpi orange, the third joint black; frons black. Fore wing pale ochreous, slightly clouded with brown. Hind wing pale orange; three large submarginal black patches, the patch at middle largest. Underside of fore wing with a black patch on vein 2 and a large patch on disk showing through to upperside.

♀ paler, with the black markings considerably reduced.

Hab. Sikhim. *Exp.*, ♂ 46, ♀ 55 millim.

1315. **Sidyma remelana,** *Moore, P. Z. S.* 1865, p. 798; *C. & S.* no. 565.
Gnophria quadrimaculata, *Möschler, Stett. ent. Zeit.* 1872, p. 352; *C. & S.* no. 629.

♂. Head white; palpi black at tips, the proboscis yellow; a frontal band and antennæ black. Thorax and abdomen white. Fore wing white, the costa black; apical portion of outer margin black; an irregular black postmedial band widest at veins 2 to 5 and often interrupted below the costa. Hind wing white, with a submarginal black spot at veins 2 to 5.

♀. The frontal band obsolescent. Fore wing with the costa and outer margin white, or slightly tinged with black; the postmedial band reduced to a spot on vein 4. Hind wing with the spot small.

Hab. Sikhim; Khásis. *Exp.*, ♂ 44, ♀ 52 millim.

1316. **Sidyma bipars,** *Moore, P. Z. S.* 1878, p. 10, pl. 1, fig. 11; *C. & S.* no. 563.

♂. Differs from *remelana* in the frons being black, the underside of head and thorax yellow; upperside of thorax fuscous; terminal segments of abdomen yellow; the whole outer area of fore wing black; a black submarginal band on hind wing from the interno-median interspace to vein 7.

♀. Upperside of thorax white; fore wing with the dark area reduced to a postmedial oblique band; the margins at apex black; hind wing with the black patch reduced to a spot.

Hab. Sikhim. *Exp.* 52 millim.

Genus MAHAVIRA.

Mahavira, *Moore, P. Z. S.* 1878, p. 11.

Type, *M. flavicollis*, Moore.

Range. Sikhim.

Palpi porrect, reaching beyond the frons. Antennæ of male with extremely long bristles and fascicles of cilia. Legs with the spurs long. Fore wings with veins 4 and 5 from cell; 6 from upper angle of cell; 7, 8, 9 stalked; no areole. Hind wing with

vein 3 from angle of cell; 4 and 5 stalked; 6 and 7 stalked; 8 from middle of cell.

1317. **Mahavira flavicollis**, *Moore, P. Z. S.* 1878, p. 11, pl. 1, fig. 3; *C. & S.* no. 571.

♂. Pure white; collar and antennæ tinged with yellow. Fore wing with the veins yellowish fuscous.

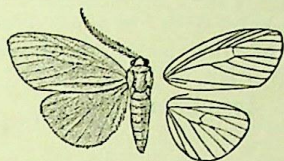



Fig. 35.—*Mahavira flavicollis*, ♂. ½.

Hab. Sikhim. *Exp.* 36 millim.

Genus GNOPHRIA.

Gnophria, *Steph. Ill. Brit. Ent., Haust.* ii. p. 98 (1829).
Atolmis, *Hübn. Verz.* p. 164 (1818), gen. non descr.
Ghoria, *Moore, P. Z. S.* 1878, p. 12.
Churinga, *Moore, P. Z. S.* 1878, p. 9.
Hesudra, *Moore, P. Z. S.* 1878, p. 12.

Type, *G. rubricollis*, Linn., from Europe.

Range. Europe; Himalayas.

Palpi upturned, reaching vertex of head, the second joint hairy. Thorax and abdomen slender and smooth. Fore wing with vein 3 from before angle of cell; 4 and 5 stalked; 6 from or from after angle of cell; 7 and 10 from areole. Hind wing with vein 3 from angle of cell; 4 and 5 stalked; 6 and 7 stalked; 8 from middle of cell.

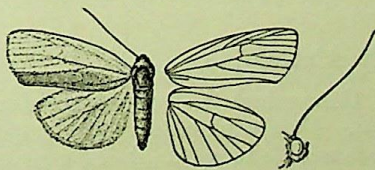



Fig. 36.—*Gnophria sericeipennis*, ♀. ½.

SECT. I. (*Gnophria*). Antennæ with short cilia and bristles.

1318. **Gnophria sericeipennis**, *Moore, P. Z. S.* 1878, p. 13; *C. & S.* no. 575.

♀. Frons fuscous; vertex of head white; collar yellowish

white; thorax fuscous; abdomen fuscous white, the anal tuft ochreous. Fore wing silky white; the inner area fuscous. Hind wing white. Underside of fore wing fuscous.

Hab. Sikhim. *Exp.* 49 millim.

1319. **Gnophria albocinerea,** *Moore, P. Z. S.* 1878, p. 13, pl. 1, fig. 10; *C. & S.* no. 574.

♂. Differs from *sericeipennis* in the tegulæ being white, with a fuscous streak. Fore wing with the inner fuscous area narrower. Hind wing fuscous; the cilia white. Underside fuscous, the inner margin of hind wing whitish.

Hab. Sikhim. *Exp.* 40 millim.

SECT. II. (*Churinga*). Antennæ of male bipectinated.

1320. **Gnophria divisa,** *Moore, P. Z. S.* 1878, p. 12, pl. 1, fig. 4; *C. & S.* no. 573.

♂. Head yellow; thorax purplish grey; abdomen paler, with ochreous anal tuft. Fore wing with the costal half yellow, the inner half purplish grey; basal half of costa black. Hind wing pale yellow.

Hab. Sikhim. *Exp.* 35 millim.

1321. **Gnophria rufifrons,** *Moore, P. Z. S.* 1878, p. 10, pl. 1, fig. 12; *C. & S.* no. 616.

♂. Head and collar orange; thorax fuscous, the tegulæ fringed with yellow; abdomen orange-yellow. Fore wing fuscous; a broad costal yellow streak not reaching the apex; a yellow streak on inner margin; cilia yellow. Hind wing orange-yellow.

♀ with the yellow streak to costa and inner margin of fore wing narrow.

Hab. N.W. Himalayas; Sikhim. *Exp.*, ♂ 55, ♀ 64 millim.

1322. **Gnophria postfusca,** n. sp.

♂. Head and thorax dark leaden grey; abdomen paler; palpi and collar orange. Fore wing dark leaden grey; costa narrowly orange from before middle to apex. Hind wing fuscous. Femora and underside of abdomen yellow.

Hab. N.W. Himalayas. *Exp.* 36 millim. Type in coll. Moore.

Genus PARAONA.

Paraona, *Moore, P. Z. S.* 1878, p. 8.

Type, *P. splendens*, Butl.
Range. Bombay.
Palpi porrect. Antennæ with short bristles in female. Fore wing with vein 3 from before angle of cell; 4 and 5 from angle; 6 and 10 from the areole; 7 from after it. Hind wing with vein 3 from angle of cell; 4 and 5 on a short stalk; 6 and 7 stalked; 8 from middle of cell.

1323. **Paraona splendens**, *Butl. Trans. Ent. Soc.* 1877, p. 357; *Moore, P. Z. S.* 1878, pl. 1, fig. 1; *C. & S.* no. 567.

♀. Fuscous; the head, tegulæ, and metathorax metallic blue-green; collar bright yellow. Fore wing with a coppery tinge; the

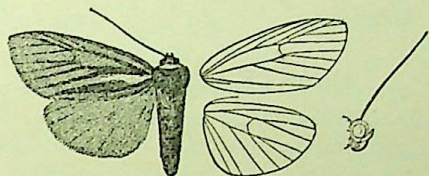



Fig. 37.—*Paraona splendens*, ♀. $\frac{1}{1}$.

veins streaked with blue-green, especially the nervures near the base; a golden-yellow streak from the base below the median nervure.
Hab. Bombay. *Exp*. 44 millim.

Genus PHILAGRIA.

Philagria, *Kirby, Cat. Lep. Het.* p. 336 (1892)

Type, *P. entella*, Cram.
Range. India, Ceylon, and Burma; Borneo; Celebes; New Hebrides.
Palpi porrect, the second joint fringed with hair. Antennæ of male bipectinated, the branches short, and with a bristle from the end. Fore wing very long and narrow; vein 3 from before angle of cell; 4 and 5 from angle; 6 from upper angle; 7, 8, 9, stalked; no areole. Hind wing with veins 4 and 5 stalked; 6 and 7 on a short stalk; 8 from middle of cell.

1324. **Philagria entella**, *Cram. Pap. Exot.* iii. pl. 208, fig. D; *C. & S.* no. 570.
Noctua delia, *Fabr. Mant. Ins.* ii, p. 140.
Æonistis entelliola, *Hübn. Verz.* p. 165.
Noctua convoluta *Fabr. Sp. Ins.* ii, p. 215.

Head, collar, and abdomen orange; thorax and extremities of tegulæ metallic blue-green. Wings pale orange. Fore wing with the costa, except the apex, blue-green; a medial blue-green band

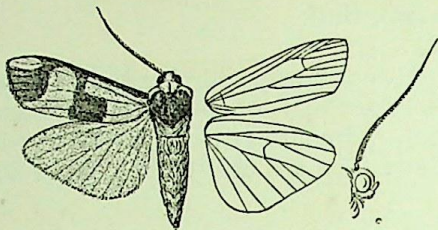



Fig. 38.—*Philagria entella*, ♂. 1/1.

expanding into a large quadrate patch below the cell; a band from the costa before the apex joined to a large quadrate patch on outer margin. Hind wing orange.

Hab. S. India; Ceylon; Burma; Borneo; New Hebrides. *Exp.*, ♂ 42, ♀ 46 millim.

Genus CHRYSÆGLIA.

Chrysæglia, *Butl. Trans. Ent. Soc.* 1877, p. 356.

Type, *C. magnifica*, Wlk.

Range. Himalayas and Assam; Borneo.

Palpi porrect, the second joint fringed with hair. Antennæ of male with strong cilia and bristles. Fore wing very long and narrow; vein 3 from before angle of cell; 4 and 5 from angle; 6 from upper angle; 7, 8, 9, stalked, 7 from before or from the same point as 9; no areole. Hind wing with vein 5 absent; 6 and 7 on a short stalk; 8 from middle of cell.

1325. **Chrysæglia magnifica,** *Wlk. Journ. Linn. Soc.* vi, p. 103; *C. & S.* no. 569.
Chrysæglia ferrifasciata, *Moore, P. Z. S.* 1878, p. 13, pl. 1, fig. 6; *C. & S.* no. 568.

Head, thorax, and abdomen orange-yellow; tegulæ metallic blue-

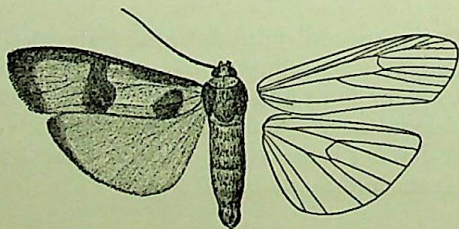



Fig. 39.—*Chrysæglia magnifica*, ♂. 1/1.

green. Fore wing golden yellow; the costa with a blue-green fascia extending into middle of cell; a blue-green spot towards base of inner margin; a medial band widest in the interno-median

interspace; a marginal band, wide in male, narrow in female. Hind wing yellow; the apical portion of outer margin fuscous.

Hab. Simla, Nepal; Sikhim; Khási Hills; Sibságar; Nága Hills; Borneo. *Exp.*, ♂ 50, ♀ 58 millim.

Genus ŒONISTIS.

Œonistis, *Hübn. Verz.* p. 165 (1818).

Type, *Œ. quadra*, Linn.

Range. Europe; Japan; China; Sikhim.

Palpi upturned, reaching vertex of head. Antennæ ciliated in both sexes. Fore wing long and narrow; veins 3, 4, 5 from angle of cell, or 3, 4 on a short stalk; 6 from below upper angle; 9 rising from 10 and anastomosing with 7 and 8 to form the areole. Hind wing with veins 3 and 4 stalked; 5 absent; 6 stalked with 7 in female, absent in male; 8 from before middle of cell.

1326. **Œonistis quadra**, *Linn. Syst. Nat.* i, p. 840.

♂. Palpi orange, the third joint black. Head black, the vertex orange; thorax orange, with a black spot on shoulders; abdomen ochreous, the anal tuft fuscous; a broad fuscous marginal band. Hind wing pale yellow, the costal area whitish fuscous.

♀. Uniform orange-yellow; abdomen and hind wing paler; fore wing with a postmedial blue-black spot on costa and another on vein 2; cilia at apex black.

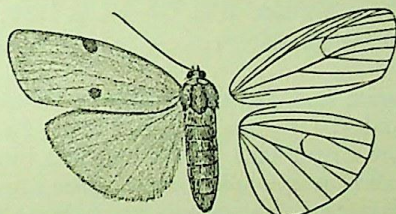



Fig. 40.—*Œonistis quadra*, ♀. ½.

The Japan form *dives*, Butl., has a narrower fuscous margin to fore wing in male, the female being indistinguishable.

The single female from Sikhim has vein 5 of the fore wing absent; if this is found to be constant it will have to be transferred to the genus *Lithosia*, being possibly the female of *L. colon*, Möschl., and *Œ. quadra* removed from the Indian list.

Hab. Europe; Sikhim. *Exp.*, ♂ 46, ♀ 48 millim.

Genus CHRYSORABDIA.

Chrysorabdia, *Butl. Trans. Ent. Soc.* 1877, p. 357.

Type, *C. viridata*, Wlk.

Range. Himalayas; Assam; Burma.

Palpi short and porrect. Antennæ of male with the cilia and bristles short. Fore wing very long and narrow; veins 3 and 4 from end of cell; 5 absent; 6 from upper angle; 10 from areole, 7 from beyond it. Hind wing with vein 5 absent; the cell open; 8 from middle of cell. Males with a large patch of differently formed scales on the fore wing near base of inner area.

1327. **Chrysorabdia viridata**, *Wlk. Cat.* xxxi, p. 225; *Moore, P. Z. S.* 1878, p. 19, pl. 2, fig. 1; *C. & S.* no. 628.
Gnophria strigata, *Möschler, Stett. ent. Zeit.* 1872, p. 353; *C. & S.* no. 627.

♂. Head, collar, and tegulæ yellow; thorax blue-black; abdomen yellow with a fuscous tinge. Fore wing with a yellow band along the costa not extending to the base; a broad blue-black subcostal band; a yellow band below median nervure and vein 4; a broad blue-black band near the inner margin, which is yellow. Hind wing pale yellow.

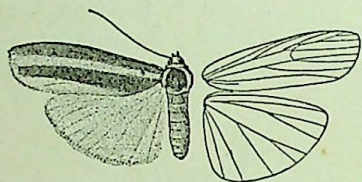



Fig. 41.
Chrysorabdia viridata, ♀. 1/1.

♀. Fore wing without the yellow band on costa; the upper blue-black band narrow and extending along the costa, in one specimen not reaching the apex; the lower blue-black band oblique from the base to centre of outer margin.

Hab. Sikhim; Silhet. *Exp.*, ♂ 40, ♀ 42–48 millim.

1328. **Chrysorabdia bivitta**, *Wlk. Cat.* vii, p. 1682; *C. & S.* no. 626.
Lithosia disjuncta, *Moore, P. Z. S.* 1865, p. 797; *C. & S.* no. 619.

♂. Head, thorax, and abdomen yellow; thorax with a black spot on vertex and the tegulæ metallic blue. Fore wing greyish yellow; a narrow costal blue streak not reaching the apex; a broad blue fascia in interno-median interspace interrupted by the patch of scales being greyish yellow; an elongate blue patch from end of cell to near outer margin. Hind wing paler.

♀ without the black spot on thorax or blue tegulæ; fore wing with the costal fascia very broad, the medial fascia continuous.

Hab. N.W. Himalayas; Sikhim; Manipur; Burma. *Exp.*, ♂ 50, ♀ 52–68 millim.

Genus **THYSANOPTYX**, nov.

Type, *T. tetragona*, Wlk.

Range. Sikhim; Silhet; Nága Hills; Nilgiris; Borneo.

Palpi porrect, the second joint fringed with hair. Antennæ with the bristles and cilia long. Legs long. Fore wing long and narrow; male with a fringe of long scales in the base of cell on upperside and a fold extending to the end of cell on underside: female with vein 2 from middle of cell, which is long and narrow;

3 and 4 on a short stalk; 5 absent; 6, 7, and 10 from the areole, 6 and 7 being curved; 11 anastomosing with 12: male, the cell extremely narrow so as to distort the neuration; 11 not anastomosing with 12. Hind wing with veins 3 and 4 stalked; 5 absent; 6 and 7 from upper angle of cell; 8 from middle of cell.

1329. **Thysanoptyx tetragona**, *Wlk. Cat.* ii, p. 510; *Butl. Ill. Het.* v, pl. 86, fig. 14; *C. & S.* no. 612.
Teulisna tenuisigna, *Moore, P. Z. S.* 1878, p. 24, pl. 2, fig. 13; *C. & S.* no. 611.
Teulisna sordida, *Butl. Ill. Het.* v, p. 39, pl. 86, fig. 15; *C. & S.* no. 610.
Teulisna oblonga, *Butl. Trans. Ent. Soc.* 1877, p. 355.

♂. Frons black; head and collar white; thorax and extremities of tegulæ black; abdomen pale fuscous, the extremity ochreous. Fore wing white, with a large quadrate black patch below the end of the cell; a postmedial black spot on the costa; the apical portion of costa and cilia black. Hind wing pale ochreous.

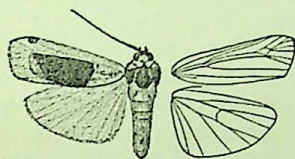



Fig. 42.
Thysanoptyx tetragona, ♂. ½.

♀ with the fore wing suffused with ochreous; the black patch extending into the cell; the postmedial spot larger.

In the form *oblonga* from Borneo the quadrate patch is smaller and the hind wing white; *sordida* has a black spot near the base of fore wing, the outer area of hind wing suffused with fuscous.

Hab. Sikhim; Silhet; Nágas; Nilgiris; Borneo. *Exp.*, ♂ 30–34, ♀ 36–38 millim.

Genus PTYOPTEROTA, nov.

Type, *P. obscura*, Hmpsn.
Range. Burma.

♂. Palpi upturned, the second joint reaching vertex of head, the third short; antennæ minutely ciliated; claspers of male large; spurs on tibiæ long. Fore wing with the apex nearly rectangular; vein 2 much curved at base; 3 from before end of cell; 4 and 5 from angle; 8 and 9 anastomosing to form the areole; a large tuft of long scales from subcostal nervure on underside from base to near end of cell. Hind wing with veins 3 and 4 from angle of cell; 5 absent; 6 and 7 on a short stalk.

1330. **Ptyopterota obscura**, n. sp.

♂. Fore wing with a dark speck at base and spot above inner margin before the middle; obscure antemedial, medial, and postmedial sinuous lines, the medial extending from costa to below cell; a black speck at end of cell; an ill-defined submarginal

sinuous fuscous band. Hind wing pale fuscous; the anal tuft ochreous.

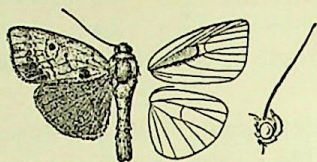



Fig. 43.—*Ptyopterota obscura*, ♂. 3/2.

Hab. Tenasserim (*Doherty*). *Exp.* 20 millim. Type in coll. Druce.

Genus PRABHASA.

Prabhasa, *Moore, P. Z. S.* 1878, p. 25.
Zadadra, *Moore, P. Z. S.* 1878, p. 25.

Type, *P. venosa*, Moore.

Range. Sikhim; Assam Hills; Burma.

Palpi short and porrect; the first two joints clothed with long hair. Antennæ with the bristles long. Fore wing with vein 2 from beyond middle of cell; veins 3 and 4 stalked; 5 absent; 6 and 7 straight; male with a fringe of scales on upperside in the cell, which is very narrow so as to distort the neuration. Hind wing with veins 4, 5 and 6, 7 stalked; 5 absent; 8 from middle of cell.

Sect. I. Fore wing with the apex subquadrate; the inner margin nearly straight; vein 11 anastomosing with 12: male with no areole; the fringe of long scales extending to end of cell.

1331. **Prabhasa venosa,** *Moore, P. Z. S.* 1878, p. 26, pl. 2, fig. 16; *C. & S.* no. 622.

♀. Pale fuscous brown. Fore wing with an indistinct angulated postmedial fuscous band, and a more or less developed postmedial spot on costa; the costa whitish from the base to the band. Hind wing pale fuscous.

♂ with the fore wing uniform greyish brown; the fringe of scales leaden grey; no postmedial spot on the costa.

Hab. Sikhim; Jaintia and Nága Hills; Burma. *Exp.* 37 millim.

1332. **Prabhasa fimbriata,** n. sp.

♂. Head ochreous; thorax and abdomen fuscous, the latter with the anal tuft ochreous. Fore wing ochreous suffused with fuscous; the costal area and some indistinct streaks in the interspaces ochreous; a dark postmedial spot on the costa, with traces of a band from it to inner margin, the fringe of scales in the cell silvery leaden grey. Hind wing suffused with fuscous.

♀ much paler, with all the markings of the fore wing obsolescent.

Hab. Bernardmyo, Burma; E. Pegu (*Doherty*). *Exp.*, ♂ 30, ♀ 32 millim. Type in coll. Elwes.

1333. **Prabhasa flavicosta,** *Moore, P. Z. S.* 1878, p. 26, pl. 2, fig. 17; *C. & S.* no. 621.

♀. Differs from *fimbriata* in the thorax, abdomen, and fore wing being dark brown; fore wing with the yellow costal fascia and postmedial black spot. Hind wing uniform brown.

Hab. Khásis. *Exp.* 34 millim.

SECT. II. Fore wing with the apex rounded; the inner margin arched; vein 11 not anastomosing with 12: male with the fringe of long scales extending to end of cell, and no areole.

1334. **Prabhasa plumbeomicans,** n. sp.

♂. Differs from *fimbriata* in the fore wing being uniform leaden grey; a broad costal ochreous fascia with a small black postmedial spot on it; traces of a postmedial line; the inner margin and cilia ochreous. Hind wing ochreous, with the apical area fuscous.

♀ with the postmedial spot of the fore wing larger, the band more distinct; the marginal interspaces streaked with ochreous; the hind wing more suffused with fuscous.

Hab. Nága Hills, 3000 feet (*Doherty*). *Exp.* 30 millim. Type in coll. Elwes.

SECT. III. Fore wing with the apex acute; the inner margin arched; vein 11 not anastomosing with 12: male with a small areole; the fringe of scales extending to half the length of cell and a streak of small modified scales to its extremity.

1335. **Prabhasa fuscistriga,** n. sp.

♂. Head and thorax brown; abdomen ochreous. Fore wing ochreous, thickly irrorated with brown scales; the modified scales filling the outer half of cell smoky black. Hind wing ochreous.

Hab. Bernardmyo, Burma, 6000 feet (*Doherty*). *Exp.* 30 millim. Type in coll. Elwes.

SECT. IV. (*Zadadra*). Fore wing of male with the inner margin highly arched and fringed with hair at base; vein 1 *b* curved; the cell narrow, with a fringe of long scales from the subcostal and from end of median nervure; veins 2 to 11 all given off near end of cell, vein 11 being remote from 12; an areole present.

1336. **Prabhasa distorta,** *Moore, P. Z. S.* 1872, p. 572, 1878, pl. 2, fig. 15; *C. & S.* no. 620.

♂. Head orange-yellow; thorax brown; abdomen fuscous, with

the anal tuft ochreous. Fore wing leaden grey; a blackish postmedial spot on the costa and traces of a postmedial band; the inner margin pale. Hind wing yellowish grey.

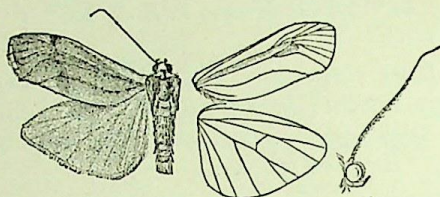



Fig. 44.—*Prabhasa distorta*, ♂. $\frac{1}{1}$.

♀. Head whitish; fore wing with pale streaks in the marginal interspaces; the costa whitish; the postmedial spot large and the band more distinct. Hind wing yellowish white.

Hab. Sikhim; Nága Hills. *Exp.* 55 millim.

Genus **LOPHONEURA**, nov.

Type, *L. uniformis*, Hmpsn.

Range. Burma.

Palpi short and porrect. Antennæ with the cilia and bristles long. Fore wing long and narrow; a fan of long scales from the median nervure at middle of cell, which is long and narrow; veins 3 and 4 stalked; 5 absent; 6 from below angle of cell; 7 and 10 from angle; 8 and 9 stalked; 11 not anastomosing with 12. Hind wing with veins 3 and 4 stalked; 5 absent; 7 from before angle of cell; 8 from middle of cell.

1337. **Lophoneura uniformis**, n. sp.

♂. Uniform pale ochreous; the fan of scales on fore wing slightly brighter in colour.

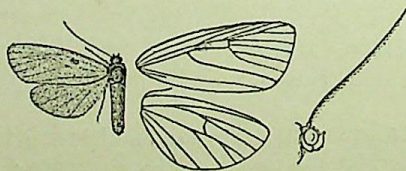



Fig. 45.—*Lophoneura uniformis*, ♂. $\frac{1}{1}$.

Hab. Tenasserim Valley (*Doherty*). *Exp.* 26 millim. Type in coll. Druce.

Genus LITHOSIA.

Lithosia, *Fabr. Ent. Syst. Suppl.* p. 459 (1798).
Systropha, *Hübn. Verz.* p. 165 (1818).
Eilema, *Hübn. Verz.* p. 165.
Manulea, *Wallengr. Wien. ent. Monats.* vii, p. 145 (1863).
Cossa, *Wlk. Cat.* xxxii, p. 232 (1865).
Gandhara, *Moore, P. Z. S.* 1878, p. 15.
Collita, *Moore, P. Z. S.* 1878, p. 16.
Katha, *Moore, P. Z. S.* 1878, p. 16.
Dolgoma, *Moore, P. Z. S.* 1878, p. 20.
Brunia, *Moore, P. Z. S.* 1878, p. 15.
Capissa, *Moore, P. Z. S.* 1878, p. 19.
Tarika, *Moore, P. Z. S.* 1878, p. 14.
Macotasa, *Moore, P. Z. S.* 1878, p. 24.

Type, *L. complana*, Linn., from Europe.
Range. Universally distributed.

Palpi short and porrect; antennæ ciliated. Fore wing with the cell shorter and broader; vein 2 from beyond the middle; 3 and 4 stalked; 5 absent; 6 from below angle, from angle, or beyond it; 9 arising from 10 and forming an areole or stalked with 7 and 8; 11 free or anastomosing with 12. Hind wing with veins 3, 4 and 6, 7 stalked; 5 absent; 8 from middle of cell.

SECT. I. Fore wing with vein 9 anastomosing with 8 to form an areole.

1338. **Lithosia varana**, *Moore, P. Z. S.* 1865, p. 797; *C. & S.* no. 577.

Head, thorax, and abdomen white; the last with the terminal segments yellow. Wings white with a fleshy tinge. Underside of fore wing wholly suffused with fuscous except the margins.
Hab. Sikhim. *Exp*. 38 millim.

1339. **Lithosia nivea**, *Moore, P. Z. S.* 1878, p. 15; *C. & S.* no. 576.

Differs from *varana* in the head, collar, and base of tegulæ being pale yellow. Wings pure white; the costa of fore wing narrowly yellow.
Hab. Sikhim. *Exp*., ♂ 38, ♀ 40 millim.

1340. **Lithosia calamaria**, *Moore, P. Z. S.* 1878, p. 18; *C. & S.* no. 585.
Systropha dorsalis, *Moore, P. Z. S.* 1878, p. 18; *C. & S.* no. 587.

♂. Uniform ochreous. Underside with the whole fore wing, except the margins and apex of hind wing, suffused with fuscous.
Hab. N.W. Himalayas; Sikhim. *Exp*. 32 millim.

1341. **Lithosia antica**, *Wlk. Cat.* ii, p. 505; *Moore, Lep. Ceyl.* ii, pl. 101, fig. 3; *C. & S.* no. 624.
Lithosia natara, *Moore, Cat. E. I. Co.* p. 304.
Lithosia sarawaca, *Butl. Trans. Ent. Soc.* 1877, p. 350.

Head, collar, and base of tegulæ yellow; thorax leaden grey; abdomen fuscous suffused with yellow. Fore wing leaden grey. a yellow stripe along the costa reaching the apex; the cilia yellow

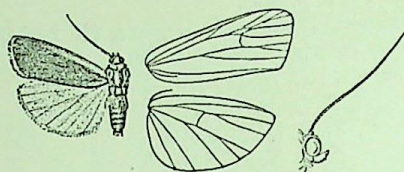



Fig. 46.—*Lithosia antica*, ♂. ¹.

Hind wing yellow. Underside uniformly suffused with yellow; some specimens with the fore wing leaden grey, the costa only yellow.

Differs from *complana* in wanting the broad yellow marginal band of fore wing on underside.

Hab. Sikhim: Khásis; Ceylon; Nicobars; Borneo; Java. *Exp.* 24–33 millim.

SECT. II. Fore wing with vein 9 stalked with 7 and 8.

A. *Fore wing with the outer margin of moderate length.*

a. *Male without secondary sexual characters on the fore wing.*

1342. **Lithosia fumidisca**, n. sp.

♀. Differs from *antica* in the thorax and fore wing being much darker fuscous brown; the latter with the outer margin as well as the costa and cilia yellow. Hind wing orange-yellow. Underside of fore wing fuscous, the costa and outer margin yellow.

Hab. Sikhim (*Möller*); Tenasserim Valley (*Doherty*). *Exp.* 24 millim. Type in coll. Druce.

1343. **Lithosia griseola**, *Hübn. Eur. Schmett.* ii, fig. 97.
Lithosia serva, *Wlk. Cat.* ii, p. 506; *Moore, P. Z. S.* 1878, p. 15, pl. 1, fig. 7; *C. & S.* no. 613.
Lithosia adaucta, *Butl. A. M. N. H.* (4) xx, 1877, p. 398.
Lithosia ægrota, *Butl. A. M. N. H.* (4) xx, 1877, p. 397.
Collita lilacina, *Moore, P. Z. S.* 1878, p. 16; *C. & S.* no. 578.

♂. Differs from *antica* in being paler. Fore wing broader; pale grey with the costal stripe narrow. Hind wing yellowish white. Underside grey; the costa of fore wing yellowish.

Hab. Europe; Japan; Nepal; Sikhim. *Exp.* 34 millim.

1344. **Lithosia fuscicilia**, n. sp.

Differs from *antica* in the thorax being dark leaden grey; the collar and tegulæ with a narrow yellow band. Fore wing

broad, dark leaden grey; the costal stripe very narrow; cilia leaden grey and silvery grey at tips. Hind wing darker yellow, the veins fuscous. Underside of fore wing leaden grey, with a diffused yellow costal band.

Hab. Sikhim (*Elwes*); Manipur; Burma (*Doherty*). *Exp.* 38 millim. Type in coll. Elwes.

1345. **Lithosia prabana,** *Moore, Cat. E. I. Co.* p. 304.
Collita parva, *Moore, P. Z. S.* 1878, p. 16, pl. 1, fig. 13; *C. & S.* no. 579.

Thorax, abdomen, and wings smoky black; the head, collar, anal tufts, and costa and cilia of fore wing yellow.

Hab. Sikhim; E. Pegu; Sumatra; Java. *Exp.*, ♂ 20, ♀ 25 millim.

1346. **Lithosia chota,** *Swinh. P. Z. S.* 1885, p. 293, pl. 20, fig. 11; *C. & S.* no. 625.

♀. Uniform brownish fuscous; fore wing with a slight glossy tone.

Hab. Poona. *Exp.* 18 millim.

1347. **Lithosia brunnea,** *Moore, P. Z. S.* 1878, p. 20, pl. 2, fig. 8; *C. & S.* no. 596.

♀. Head, thorax, and fore wing uniform dark brown; abdomen and hind wing fuscous.

Hab. Sikhim. *Exp.* 27 millim.

1348. **Lithosia auriflua,** *Moore, P. Z. S.* 1878, p. 18, pl. 2, fig. 7; *C. & S.* no. 586.

♂. Pale straw-yellow; the hind wing slightly paler. The cell of the fore wing is very narrow especially towards the base, and the veins are bent up towards the costa; veins 3 and 4 of fore wing and 3, 4 and 6, 7 of hind wing are on very long stalks.

Hab. Kulu; Manipur. *Exp.* 30 millim.

1349. **Lithosia microxantha,** n. sp.

Head, thorax, and abdomen orange-yellow. Fore wing deep orange-yellow; hind wing paler.

Differs from *simplex*, Wlk. = *decreta*, Butl., from Borneo, in the fore wing being considerably broader and more rounded at apex.

Hab. E. Pegu (*Doherty*). *Exp.*, ♂ 20, ♀ 23 millim. Type in coll. Elwes.

1350. **Lithosia nigripars,** *Wlk. Cat.* vii, p. 1779; *C. & S.* no. 592.

♀. Head and thorax yellowish white; abdomen fuscous, clothed with white hairs, the extremity ochreous. Fore wing yellowish white, irrorated with a few fuscous scales; the costa, outer margin, and base of cilia orange-yellow. Hind wing dirty white; the outer margin tinged with yellow. Underside suffused with fuscous.

Hab. Sikhim. *Exp.* 34 millim.

*1351. **Lithosia ? colon,** *Möschler, Stettin. Ent. Zeit.* 1872, p. 353; *C. & S.* no. 617.

Head and tegulæ straw-yellow; thorax grey with a lilac tinge; abdomen with grey hairs on the back, the extremity yellow; legs yellow, banded with grey; tarsi grey. Fore wing reddish grey; the base and costa tinged with golden yellow; a prominent black medial spot on the costa, and another on vein 2; cilia yellow. Hind wing yellow. Underside of fore wing with broad yellow edges and showing the spots of upperside.

Hab. Silhet. *Exp.* 39 millim.

1352. **Lithosia reticulata,** *Moore, P. Z. S.* 1865, p. 798; *C. & S.* no. 598.

♀. Head and thorax pale brown; a dark speck at end of tegulæ; abdomen fuscous, the extremity ochreous. Fore wing pale brown, rrorated with fuscous scales; a diffused angulate dark brown medial band. Hind wing ochreous.

Hab. Sikhim. *Exp.* 34 millim.

1353. **Lithosia cubitifera,** n. sp.

♀. Differs from *reticulata* in being slightly irrorated with fuscous; the postmedial band doubly curved, the upper part incurved, the lower excurved in the interno-median interspace.

One specimen is much more suffused with fuscous than the other.

Hab. Nága Hills, 3000 feet (*Doherty*). *Exp.* 20–23 millim. Type in coll. Elwes.

1354. **Lithosia angulifera,** *Feld. Reis. Nov.* pl. 106, fig. 12; *C. & S.* no. 595.

♀. Differs from *reticulata* in the head, thorax, and fore wing being bright ochreous, without fuscous irroration. Hind wing pale yellow.

Hab. Sikhim; Nilgiris; Ceylon. *Exp.* 29 millim.

1355. **Lithosia obliterans,** *Feld. Verh. zool.-bot. Ges. Wien,* 1868, p. 285; *C. & S.* no. 597.

Differs from *reticulata* in the head, thorax, and fore wing being purplish grey without fuscous suffusion. Fore wing with the angulate band more prominent and less diffused. Hind wing pale ochreous with a fuscous tinge.

Hab. Ceylon. *Exp.* 30 millim.

1356. **Lithosia brevipennis,** *Wlk. Cat.* ii, p. 509; *Hmpsn. Ill. Het.* viii, pl. 139, figs. 2, 11; *C. & S.* no. 580.

♂. Head yellowish; thorax and fore wing uniform yellowish brown; abdomen and hind wing pale yellow.

♀ bright yellow; abdomen and hind wing paler.

Hab. Nilgiris; Ceylon. *Exp.*, ♂ 28, ♀ 30 millim.

1357. **Lithosia punctifera**, *Hmpsn. Ill. Het.* ix, p. 80, pl. 158, figs. 21–23.
Systropha fuscipes, *Hmpsn. Ill. Het.* ix, p. 80 (♀).

♂. Differs from *brevipennis* in the fore wing having a dark spot at end of cell.

♀ smaller and paler than that sex of *brevipennis*.
Hab. Ceylon. *Exp.* 20 millim.

1358. **Lithosia conformis**, *Wlk. Cat.* ii. p. 509; *C. & S.* no. 61

♀. Differs from *brevipennis* in having the head black; the abdomen fuscous. Fore wing broader and brownish yellow.
Hab. N. India. *Exp.* 36 millim.

1359. **Lithosia basigera**, *Wlk. Cat.* xxxi, p. 233; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 1; *C. & S.* no. 600.
Cossa ruma, *Swinh. P. Z. S.* 1889, p. 403; *Hmpsn. Ill. Het.* vii pl. 143, fig. 8.

♂. Frons orange; head and thorax dark fuscous; abdomen fuscous, the extremity ochreous. Fore wing fuscous; the costa orange; a basal fuscous patch on a white fascia on basal half of costa; an indistinct fuscous medial band angled inwards; a very indistinct waved postmedial line. Hind wing yellow with an orange tinge.
♀ with the costal patch of the fore wing joined to the angulate medial band.
Hab. Mahableshwar; Nilgiris. *Exp.*, ♂ 30–38, ♀ 34–44 millim.

1360. **Lithosia pallida**, *Moore, P. Z. S.* 1878, p. 21; *C. & S.* no. 605.

♂. Head, thorax, and abdomen pale brown. Fore wing pale brown; black antemedial and medial patches on the costa; a speck at lower angle of cell, another below the cell on vein 1; faint traces of a submarginal band. Hind wing pale ochreous, with traces of a submarginal band.
♀ with the antemedial patch on costa of fore wing obsolescent.
Hab. Kángra. *Exp.*, ♂ 32, ♀ 36 millim.

1361. **Lithosia nebecula**, *Moore, P. Z. S.* 1879, p. 394; *C. & S.* no. 603.

♀. Differs from *pallida* in the thorax and abdomen being blackish. Wings duller grey; fore wing with one postmedial black spot on the costa; the apex and parts of marginal area suffused with black.
Hab. Andamans. *Exp.* 31 millim.

1362. **Lithosia quadrisignata**, *Moore, P. Z. S.* 1878, p. 21, pl. 2, fig. 10; *C. & S.* no. 604.

Head, collar, and abdomen pale brown; thorax darker. Fore wing pale brown, with antemedial and medial oblique black streaks from the costa; a dark streak below median nervure and another

on inner margin; a small spot at end of cell, and ill-defined submarginal and marginal bands.

Hab. Sikhim. *Exp.* 32 millim.

b. (Macotasa). *Fore wing of male with a fringe of long scales in the basal half of cell, which is very narrow; veins 3 and 4 bent downwards; vein 2 anastomosing with 3.*

1363. **Lithosia tortricoides**, *Wlk. Journ. Linn. Soc.* vi, p. 107.
Teulisna biplagella, *Butl. Trans. Ent. Soc.* 1877, p. 355.
Macotasa biplagella, *Moore, P. Z. S.* 1878, p. 25, pl. 2, fig. 14.

♂. Head pale ochreous; thorax brown; abdomen fuscous, with the anal tuft ochreous. Fore wing yellowish fuscous; the costa whitish, with a large black patch at centre. Hind wing with the base yellowish; the outer area fuscous.

♀ with the costal black spot of fore wing smaller and further from the base; the costa black at apex.

Hab. Sikhim; Nilgiris; Borneo; Java. *Exp.* 30 millim.

B. *Fore wing narrow, with the outer margin shorter.*

a. *Male without patches of modified scales on fore and hind wings.*

1364. **Lithosia intermixta**, *Wlk. Cat.* xxxi, p. 229; *Hmpsn. Ill. Het.* ix, pl. 158, fig. 1; *C. & S.* no. 582.

♂. Head, thorax, and fore wing uniform brownish yellow; abdomen and hind wing pale yellow.

Hab. Nilgiris; Ceylon; Andamans. *Exp.*, ♂ 25–28, ♀ 22 millim.

1365. **Lithosia nigrifrons**, *Moore, P. Z. S.* 1872, p. 572; *C. & S.* no. 583.
Lithosia lævis, *Butl. A. M. N. H.* (4) xx, 1877, p. 398.

Frons fuscous; head, collar, and tegulæ orange-yellow; thorax and basal segments of abdomen whitish, the terminal segments orange. Fore wing fleshy white; the apex and cilia orange-yellow. Hind wing white; the outer area pale yellow.

The form *lævis* from Japan has the underside of the fore wing slightly suffused with fuscous.

Hab. Japan; Kángra; Sikhim; Nágas. *Exp.* 38 millim.

1366. **Lithosia cucullata**, *Moore, P. Z. S.* 1878, p. 17; *C. & S.* no. 581.

♂. Head and thorax black; abdomen grey at base, orange-yellow towards extremity. Fore wing flesh-colour, the outer margin suffused with fuscous; costa at apex and cilia yellow. Hind wing flesh-colour with a yellow tinge.

Hab. Andamans. *Exp.* 28 millim.

1367. **Lithosia euchana**, *Swinh. A. M. N. H.* (6) xii, p. 216.

Greyish white; head and vertex of thorax orange; collar, tegulæ, and metathorax spotted with black; abdomen orange

towards extremity; fore wing with postmedial dark spots above veins 2 and 4; outer margin of both wings orange.

Hab. Shán States. *Exp.*, ♂ 44, ♀ 52 millim.

1368. **Lithosia terminalis,** *Moore, P. Z. S.* 1878, p. 17, pl. 1, fig. 14; *C. & S.* no. 584.
Katha? semifusca, *Elw. P. Z. S.* 1890, p. 388, pl. 32, fig. 9.

♂. Head and thorax black; collar grey; tegulæ fringed with grey; abdomen grey, the terminal segments ochreous. Fore wing yellowish grey, with a broad black submarginal band. Hind wing pale yellow.

In the form *semifusca* the black submarginal band extends inwards to the end of the cell.

Hab. Sikhim. *Exp.* 34 millim.

1369. **Lithosia fasciata,** *Moore, P. Z. S.* 1878, p. 20, pl. 2, fig. 4 *C. & S.* no. 589.

♂. Head, thorax, and fore wing bright orange-yellow. Fore wing with the inner area suffused with brown scales from the base to near outer margin. Abdomen and hind wing paler.

Hab. Ceylon. *Exp.* 31 millim.

1370. **Lithosia pallens,** *Moore, P. Z. S.* 1878, p. 19, pl. 2, fig. 3; *C. & S.* no. 593.

♂. Head and thorax bright ochreous. Fore wing glossy yellowish white; the costa blackish at base; the outer margin yellow. Hind wing pale ochreous. Underside of fore wing suffused with fuscous, except the marginal area.

♀ uniformly paler; the head and thorax yellowish white.

Hab. Kángra; Kurseong; Sikhim. *Exp.*, ♂ 40, ♀ 42 millim.

b. (Capissa). *Fore wing of male with a fold and streak of modified scales along median nervure and vein 2. Hind wing with a patch of modified scales covering the whole disk.*

1371. **Lithosia vagesa,** *Moore, Lep. E. I. Co.* p. 304; *C. & S.* no. 594.
Lithosia innotata, *Butl. Trans. Ent. Soc.* 1877, p. 352; *Moore, P. Z. S.* 1878, pl. 2, fig. 2; *C. & S.* no. 591.
Capissa auriflava, *Moore, P. Z. S.* 1878, p. 19; *C. & S.* no. 588.
Capissa flavens, *Moore, P. Z. S.* 1878, p. 20; *C. & S.* no. 590.

Uniform bright ochreous; the extremity of abdomen orange.

♂ with the patches of modified scales on fore and hind wing orange.

The form *innotata=auriflava* from the N.W. Himalayas and Nepal has the legs banded with black; in the Eastern form *vagesa* they are wholly black.

Hab. N.W. Himalayas; Nepal; Sikhim; Khásis. *Exp.* 43 millim.

Genus MITHUNA.

Mithuna, *Moore, P. Z. S.* 1878, p. 21.

Type, *M. quadriplaga*, Moore.
Range. Sikhim.
Palpi short and porrect. Antennæ minutely ciliated in male. Fore wing long, the outer margin erect; veins 3 and 4 on a long stalk; 5 absent; 6 from angle of cell; 7, 8, 9, 10 stalked; 11 anastomosing with 12. Hind wing with veins 3 and 4 on a long stalk; 5 absent; 6 and 7 stalked; 8 from centre of cell.

1372. **Mithuna quadriplaga**, *Moore, P. Z. S.* 1878, p. 21, pl. 2, fig. 9; *C. & S.* no. 599.

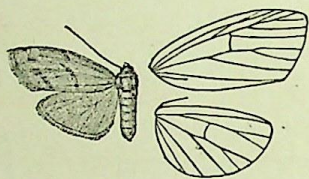



Fig. 47.—*Mithuna quadriplaga*, ♀. 1/1.

♀. Head, thorax, and fore wing yellowish brown, irrorated with fuscous; fore wing with an indistinct medial fuscous band, angled at lower extremity of cell; a similar submarginal nearly straight band. Abdomen and hind wing pale fuscous.
Hab. Sikhim. *Exp.* 26 millim.

Genus TEULISNA.

Teulisna, *Wlk. Journ. Linn. Soc.* vi, p. 109 (1862).
Corcura, *Wlk. Journ. Linn. Soc.* vi, p. 110.
Tegulata, *Wlk. Journ. Linn. Soc.* vi, p. 110.
Ityca, *Wlk. Cat.* xxxv, p. 1889 (1866).

Type, *T. plagiata*, Wlk., from Borneo.
Range. Ceylon; Nilgiris; Sikhim; Assam; Burma; Malacca; Borneo; Java.
Palpi short, porrect, and clothed with long hair. Antennæ of male with the cilia and bristles short. Fore wing triangular, with the apex acute; the outer margin nearly erect; a fringe of long scales in the basal part of the cell on the upperside; veins 3 and 4 stalked; 5 absent; 6, 7, 8, 9 stalked; 10 from cell; no areole; 11 anastomosing with 12: male with the median nervure bent, the outer part of the cell narrow, and the neuration somewhat distorted. Hind wing with veins 3, 4 and 6, 7 stalked; 5 absent; 8 from middle of cell: male with a patch of modified scales at base of median nervure; the cell short and discocellulars oblique.

SECT. I. Fore wing with the costal lobe present in both sexes.

1373. **Teulisna tumida**, *Wlk. Journ. Linn. Soc.* vi, p. 110.
Tegulata basistriga, *Moore, P. Z. S.* 1878, p. 22, pl. 2, fig. 5; *C. & S.* no. 607.
Ityca humeralis, *Wlk. Cat.* xxxv, p. 1890.

♂. Head, thorax, and basal segments of abdomen pale brown,

the terminal segments black. Fore wing pale brown, with a purplish tinge and suffused with fuscous; a black streak on the base of costa, and a large black spot at end of cell Hind wing yellowish, suffused with fuscous towards outer margin.

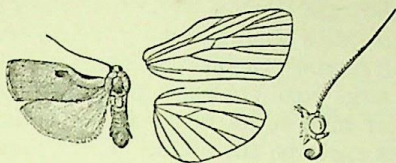



Fig. 48.—*Teulisna tumida*, ♂. ½.

♀ with the abdomen fuscous; the anal tuft ochreous; fore wing with the black spot at end of cell reduced to a minute speck.

Hab. Ceylon; Malacca; Borneo. *Exp.* 28 millim.

1374. **Teulisna protuberans,** *Moore, P. Z. S.* 1878, p. 23, pl. 2, fig. 6; *C. & S.* no. 608.

♀. Differs from *tumida* in the fore wing being without the basal streak on the costa; the lobe further from the base, with a large black spot on the costa just before it; a black speck at end of cell. Hind wing yellow.

Hab. Sikhim. *Exp.* 32 millim.

1375. **Teulisna obliquistria,** n. sp.

♂. Differs from *tumida* in the terminal segments of the abdomen being fuscous. Fore wing slightly irrorated with fuscous, the subbasal costal patch fuscous; the spot at end of cell minute and nearly joined to an oblique stria from the costa. Hind wing uniform brownish ochreous.

♀. Fore wing with a narrow costal streak; no oblique streak; a black streak along middle of inner margin; outer area of hind wing suffused with fuscous.

Hab. Sikhim (*Möller*); Momeit, Burma (*Doherty*). *Exp.* 28 millim. Type in coll. Elwes.

Sect. II. Fore wing with the costal lobe absent.

1376. **Teulisna inducta,** *Wlk. Cat.* xxxi, p. 232; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 15; *C. & S.* no. 602.

♂. Differs from *tumida* in the frons being ochreous; head, thorax, and abdomen fuscous, the last with the extremity blackish. Fore wing narrower, fuscous; the basal costal patch large and dark fuscous, the fringe of scales below it and a patch on costa beyond it white; traces of darker medial and postmedial diffused bands. Hind wing uniform pale yellow.

♀ with the fore wing uniform fuscous, except a whitish streak below the costa and dark speck at end of cell.

Hab. Nilgiri plateau. *Exp.*, ♂ 30, ♀ 30–42 millim.

1377. **Teulisna uniplaga**, n. sp.

♀. Frons black. Head, collar, and tegulæ yellowish white; thorax black; abdomen fuscous, with the extremity ochreous. Fore wing whitish, suffused with fuscous; a blackish speck above inner margin near the base; a large quadrate black medial patch from upper part of cell to inner margin, its angle towards the apex excised; a postmedial black speck on the costa. Hind wing uniform fuscous.

Hab. Margharita, Assam; E. Pegu; Tenasserim Valley (*Doherty*). *Exp.* 25 millim. Type in coll. Druce.

Genus NISHADA.

Nishada, *Moore, P. Z. S.* 1878, p. 23.

Type, *N. flabrifera*, Moore.

Range. Calcutta; Ceylon; Burma; Sumatra; Borneo.

Palpi short and porrect, the second joint fringed with long hair. Antennæ of male with cilia and bristles, the upper surface covered with rough scales. Fore wing broad; the costa much arched; a large smooth patch on the inner area of underside for the articulation of the hind wing; vein 5 absent; 7, 8, 9 stalked; 11 anastomosing with 12. Hind wing of male with a costal fold, from which projects a fringe of large scales; vein 4 absent; female with veins 3, 4 and 6, 7 stalked; 5 absent; 8 from middle of cell.

SECT. I. Male with the basal half of antennæ not thickened. Fore wing with veins 3 and 4 from cell; 6 from below the angle; 10 absent. Hind wing with vein 6 absent.

1378. **Nishada flabrifera**, *Moore, P. Z. S.* 1878, p. 23; *C. & S.* n. 609.

♂. Head smoky black; thorax yellowish brown; abdomen ochreous, the second segment almost bare of scales and showing the dark cuticle. Fore wing uniform yellowish brown. Hind wing ochreous.

Hab. Calcutta; Ceylon. *Exp.* 30 millim.

SECT. II. Male with the basal half of antennæ thickened. Fore wing with veins 3 and 4 stalked; 6 from angle of cell; 10 present. Hind wing with veins 6 and 7 stalked, or 6 absent.

1379. **Nishada rotundipennis**, *Wlk. Journ. Linn. Soc.* vi, p. 104.
Lithosia nodicornis, *Wlk. Journ. Linn. Soc.* vi, p. 104.
Lithosia chilomorpha, *Snell. Tijd. v. Ent.* xx, p. 67, pl. 5, fig. 1.

♂. Differs from *flabrifera* in the vertex of head being yellow-brown. Underside of fore wing with a black band along the apical half of outer margin.

♀ with the frons yellow and the second segment of abdomen clothed with scales.

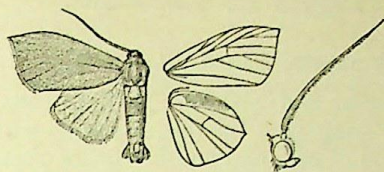



Fig. 49.—*Nishada rotundipennis*, ♂. ½.

The Burmese male has the second segment of abdomen clothed with scales.

Hab. E. Pegu; Sumatra; Borneo. *Exp.* 26–34 millim.

Genus GAMPOLA.

Gampola, *Moore, P. Z. S.* 1878, p. 26.

Type, *G. fasciata*, Moore.

Range. Ceylon.

Palpi short, porrect, and clothed with long hair. Antennæ with the cilia and bristles long. Mid tibiæ with one pair of spurs; hind tibiæ with two pairs. Tegulæ of male fringed with long hair. Fore wing broad and much distorted, the apex folded over; a fringe of long scales on the upperside from the basal part of the costa; the inner margin distorted and fringed with long scales towards outer angle; the cell narrow and occupying the centre of the wing; vein 1 *b* reaching inner margin before the angle; 3 and 4 from the cell; 5 absent; 6 from below the angle; 7, 8, 9 stalked; 11 anastomosing with 12. Hind wing broad and much distorted; the cell broad and long; veins 4 and 5 absent; 6 and 7 from the upper angle.

♀ with the wings of normal shape; fore wing with veins 3 and 4 stalked; 5 absent; 6 from below angle of cell; 7, 8, 9 stalked; 11 anastomosing with 12. Hind wing with veins 4 and 5 absent; 6 and 7 stalked.

1380. **Gampola fasciata**, *Moore, P. Z. S.* 1878, p. 27, pl. 2, fig. 18; *C. & S.* no. 623.

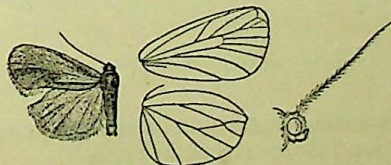



Fig. 50.—*Gampola fasciata*, ♂. ½.

♂. Brownish fuscous; the anal tuft ochreous; the costa and apex of fore wing ochreous; hind wing pale.

♀ with an indistinct angled fuscous band just beyond the middle of fore wing; some dark marks on outer margin.

Hab. Ceylon. *Exp.*, ♂ 28, ♀ 34 millim.

1381. **Gampola binotata,** *Hmpsn. Ill. Het.* ix, p. 81, pl. 158, fig. 24.

♀. Head, thorax, and abdomen pale fuscous, the anal tuft ochreous. Fore wing pale fuscous, irrorated with brown scales; a dark spot at end of cell, and another below vein 2. Hind wing paler.

Hab. Ceylon. *Exp.* 18 millim.

Genus SIMAREEA.

Simareea, *Moore, P. Z. S.* 1878, p. 14.

Type, *S. basinota*, Moore.

Range. Himalayas.

Palpi upturned, reaching vertex of head. Antennæ with the cilia and bristles long. Fore wing with veins 3 and 4 from angle of cell; 5 absent; 6 from upper angle; 7 and 10 from areole or 7 from beyond it; 11 anastomosing with 12. Hind wing with veins 3, 4 and 6, 7 stalked; 5 absent; 8 from before middle of cell.

1382. **Simareea basinota,** *Moore, P. Z. S.* 1865, p. 798; 1878, pl. 1, fig. 16; *C. & S.* no. 614.

Simareea lurida, *Butl. Ill. Het.* vii, p. 34, pl. 122, fig. 10.

Head, thorax, and fore wing dark hair-brown, irrorated with pale brown hairs and scales; fore wing with a pale spot at base of inner margin. Hind wing pale fuscous; the outer margin darker.

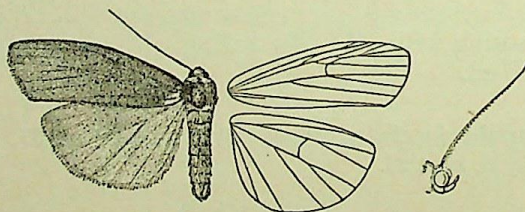



Fig. 51.—*Simareea basinota*, ♂. 1/1.

Abdomen pale fuscous, the terminal segments yellow. Underside of fore wing with a fulvous streak in the cell.

The form *lurida* from Kángra has the hind wing paler, with a fulvous patch below the costa on upperside.

Hab. Kángra; Sikhim. *Exp.* 48–52 millim.

Genus HEMONIA.

Hemonia, *Wlk. Cat.* xxviii, p. 425 (1863).

Type, *H. orbiferana*, Wlk.
Range. Ceylon; Borneo.
Palpi slight and porrect; antennæ ciliated in male. Fore wing very broad and rounded; vein 3 from before angle of cell; 4 and 5 stalked; 6 and 7 stalked; 8, 9, 10, 11 nearly erect, 11 anastomosing with 12. Hind wing with veins 4 and 5 stalked, 3 absent; 6 and 7 stalked; 8 from near end of cell.

1383. **Hemonia orbiferana,** *Wlk. Cat.* xxviii, p. 426.
Pitane rotundata, *Snell. Tijd. v. Ent.* 1879, p. 90, pl. 10, fig. 6.

Head, thorax, and fore wing dark purplish grey; the last with a fulvous speck on an ochreous ground at end of cell; a dark line

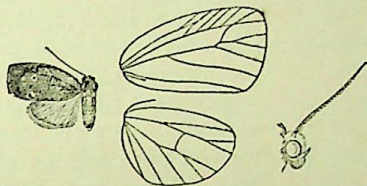



Fig. 52.—*Hemonia orbiferana*, ♂. 1/1.

from the centre of costa to near apex, then curved round to outer angle. Abdomen and hind wing pale fuscous; in *Bornean* specimens white.
Hab. Ceylon; Borneo. *Exp.* 17–24 millim.

Genus ÆMENE.

Æmene, *Wlk. Cat.* ii, p. 541 (1854).
Panassa, *Wlk. Cat.* xxxii, p. 607 (1865).
Autoceras, *Feld. Reis. Nov.* pl. 106, fig. 24 (1875).

Type, *Æ. taprobanis*, Wlk.
Range. Japan; throughout India and Ceylon.
Palpi porrect, reaching beyond the frons. Antennæ serrate in male, ciliated in female. Fore wing short; vein 3 from before angle of cell; 4 and 5 from close to angle; 6 from below upper angle; 7, 8, 9 stalked. Hind wing with veins 4 and 5 from close to the angle; 3 absent; 6 and 7 stalked; 8 from middle of cell.

SECT. I. Fore wing broad, the apex rounded.

1384. **Æmene grisea,** *Hmpsn. Ill. Het.* ix, p. 81, pl. 158, fig. 2.

♂. Silvery grey. Fore wing with an indistinct nearly straight erect medial line; a prominent black speck at end of cell; an indistinct postmedial line excurved round end of cell; three black specks on the margin below the apex and one at outer angle.
Hab. Ceylon. *Exp.* 14 millim.

1385. **Æmene taprobanis,** *Wlk. Cat.* ii, p. 542; *Moore, Lep. Ceyl.* ii, pl. 104, fig. 2; *C. & S.* no. 715.
Panassa cingalesa, *Wlk. Cat.* xxxii, p. 607.
Autoceras grammophora, *Feld. Reis. Nov.* pl. 106, fig. 24.
Æmene subcinerea, *Moore, P. Z. S.* 1878, p. 34; *C. & S.* no. 714.
Æmene sordida, *Butl. Trans. Ent. Soc.* 1877, p. 372; *C. & S.* no. 713.
Æmene quinquefascia, *Hmpsn. Ill. Het.* viii, p. 52, pl. 140, fig. 15.
Æmene sinuata, *Moore, P. Z. S.* 1878, p. 34, pl. 3, fig. 11; *C. & S.* no. 712.

Head and thorax grey; tegulæ usually with a black speck. Fore wing grey, more or less suffused with fuscous; waved sub-basal, antemedial, medial, and postmedial black lines, the last excurved round the end of the cell, then bent inwards to near the medial band and with some diffused streaks beyond it; a series of marginal specks; a black spot at centre of cell and another at end of it. Hind wing pale, more or less suffused with fuscous. The form *sordida* is brownish with a very slight fuscous tinge, the hind wing almost pure white; *quinquefascia* from the Nilgiris is a very dark form, the body and wings much suffused with fuscous, the fore wing with the streaks beyond the postmedial line forming a connected band. Some specimens from Sikhim have the markings of fore wing fuscous instead of black.

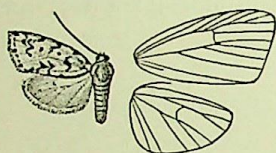



Fig. 53.
Æmene taprobanis, ♂. ½.

Hab. Kángra; Sikhim; Nágas; Nilgiris; Ceylon. *Exp.*, ♂ 18–24, ♀ 24–30 millim.

1386. **Æmene maculifascia,** *Moore, P. Z. S.* 1878, p. 33, pl. 3, fig. 10; *C. & S.* no. 711.

♂. Differs from *taprobanis* in the ground-colour of head, thorax, and fore wing being pure white. Fore wing with a broad fuscous band inside the postmedial curved line; the submarginal series of specks straighter and starting from a dark blotch on the costa before the apex. Hind wing with traces of a speck at end of cell and postmedial line.

Hab. Sikhim. *Exp.* 16 millim.

1387. **Æmene guttulosana,** *Wlk. Cat.* xxviii, p. 429; *Moore, Lep. Ceyl.* ii, pl. 104, fig. 3; *C. & S.* no. 710.

Differs from *taprobanis* in the ground-colour being clear ochreous without fuscous suffusion; the lines of the fore wing broken up into small spots.

Hab. Bengal; Nilgiris; Ceylon. *Exp.*, ♂ 18, ♀ 20 millim.

1388. **Æmene nilgirica,** *Hmpsn. Ill. Het.* viii, p. 51, pl. 140, fig. 1.
Æmene cinereicolor, *Hmpsn. Ill. Het.* viii, p. 51, pl. 140, fig. 8.

Head and thorax greyish fuscous. Fore wing grey, irrorated with black scales; a black basal patch on the costa; antemedial and medial costal spots; a spot at centre of cell and another at end of it; a patch on costa before the apex; traces of antemedial, medial, and postmedial waved lines; a marginal series of black specks. Abdomen and hind wing pale fuscous.

The form *nilgirica* from the plateau has the markings of fore wing reduced; whilst *cinereicolor* from the lower slopes has them large and prominent.

Hab. Nilgiris. *Exp.* 19 millim.

1389. **Æmene tenebrosa,** *Moore, P. Z. S.* 1878, p. 34; *C. & S.* no. 716.

Head, thorax, and fore wing dark fuscous powdered with grey. Fore wing with indistinct subbasal, antemedial, medial, postmedial, and submarginal maculate bands; dark spots at middle and end of cell. Abdomen and hind wing paler.

Hab. Bombay; Mhow. *Exp.*, ♂ 18, ♀ 20 millim.

1390. **Æmene multipuncta,** *Hmpsn. Ill. Het.* ix, p. 81, pl. 158, fig. 3.

Head and collar grey; thorax and abdomen fuscous. Fore wing whitish grey; two subbasal black specks; a diffused medial band broken at middle; two black specks at end of cell; a submarginal curved series of specks and marginal series; a fuscous patch on costa before the apex. Hind wing fuscous.

Hab. Ceylon. *Exp.* 18 millim.

SECT. II. Fore wing narrower, the apex more acute.

1391. **Æmene sagittifera,** *Moore, P. Z. S.* 1888, p. 392; *Butl. Ill. Het.* vii, pl. 122, fig. 12.

Head and thorax white. Fore wing white; two black spots at base, one on costa, the other on vein 1; antemedial, medial, postmedial, and marginal series of black specks; a black streak at end of cell with one above it on costa; a black streak at end of cell, and patch on costa before the apex. Abdomen and hind wing pale fuscous.

Hab. Kángra; Sikhim. *Exp.* 20 millim.

Genus COSTARCHA.

Costarcha, *Hmpsn. Ill. Het.* viii, p. 53 (1891).

Type, *C. indistincta*, Hmpsn.

Range. Nilgiris.

Palpi minute and porrect. Antennæ of male bipectinate, the branches short. Tibiæ with the spurs long. Fore wing with the costa highly arched, the outer margin straight; veins 4 and 5 from angle of cell; 6 absent; 7, 8, 9 stalked. Hind wing with veins 4 and 5 from angle of cell; 3 and 6 absent; 8 from middle of cell.

1392. Costarcha indistincta, *Hmpsn. Ill. Het.* viii, p. 53, pl. 140, fig. 22.

♂. Pale fuscous. Fore wing irrorated with dark brown scales; oblique indistinct antemedial, medial, postmedial, and subapical

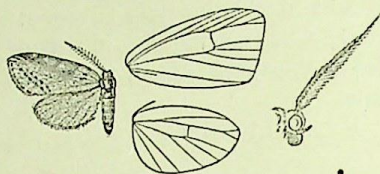



Fig. 54.—*Costarcha indistincta*, ♂. 1/1.

strigæ from the costa; an indistinct submarginal line; a marginal series of specks.

Hab. Nilgiris. *Exp.* 25 millim.

Genus OXACME, nov.

Type, *O. dissimilis*, Hmpsn.

Range. Sikhim.

♀. Palpi minute and porrect; antennæ simple. Fore wing with the costa straight to the end of vein 12, then truncate and produced to a point at veins 7 and 8; outer margin produced to a point at veins 4 and 5, then excised to outer angle; vein 2 curved; 3, 4, 5 from near angle of cell; 6 from upper angle; 7, 8, 9 stalked. Hind wing slightly angled at veins 3 and 4; vein 5 absent; 6 and 7 on a long stalk; 8 from beyond middle of cell.

1393. Oxacme dissimilis, n. sp.

♀. Head, thorax, and abdomen fuscous; anal tuft ochreous. Fore wing fuscous, two black spots on the costa before middle, an indistinct obliquely curved line arising from the outer spot; a broad diffused medial dark band; a postmedial curved series of black specks starting from a somewhat prominent spot on the costa; a series of short black lines on the outer margin. Hind wing pale fuscous, the apex somewhat darker.

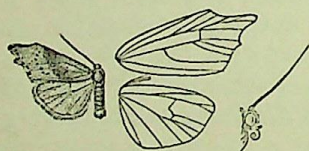



Fig. 55.
Oxacme dissimilis, ♀. 1/1.

Hab. Sikhim. *Exp.* 18 millim. Type in coll. Elwes.

Genus UTRICULIFERA.

Utriculofera, *Hmpsn. Ill. Het.* ix, p. 81.

Type, *U. fuscapex*, Hmpsn.

Range. Ceylon.

Palpi porrect and reaching beyond the frontal tuft. Antennæ of male with a very large hollowed-out vesicle after the basal joint,

the terminal portion ciliated; the abdomen with a pair of lateral tufts of long hair from the third segment. Tibiæ with the spurs long. Fore wing with the costa arched near the base; the outer margin straight; the inner margin of male with a basal fold containing tufts of hair; vein 3 from before angle of cell; 4 and 5 from close to angle; 6 from below upper angle; 7, 8, 9 stalked. Hind wing with vein 4 from angle of cell; 5 from above angle; 3 absent; 6 and 7 stalked; 8 from near end of cell.

1394. **Utriculifera fuscapex,** *Hmpsn. Ill. Het.* ix, p. 82, pl. 158, figs. 7, 17.

Brownish grey. Fore wing with the costa dark in parts; the

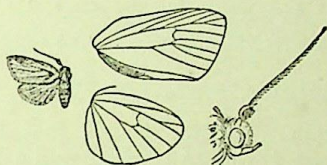



Fig. 56.—*Utriculifera fuscapex*, ♂. 1/1.

inner basal area suffused with brown; two dark specks beyond the cell; the apex suffused with fuscous.

Hab. Nawala-pittia, Ceylon. *Exp.* 16 millim.

Genus NARASODES.

Narasodes, *Moore, Lep. Ceyl.* iii, p. 535 (1887).

Type, *N. punctana*, Wlk.

Range. Ceylon.

Palpi slender, porrect, and reaching beyond the frontal tuft. Antennæ minutely ciliated in male. Fore wing with a slight raised tuft of scales in the cell; veins 3, 4, 5 from angle of cell; 6 absent; 7 and 8 stalked, 9 and 10 free. Hind wing with vein 4 from angle of cell; 5 from above the angle; 3 absent; 6 and 7 stalked; 8 from middle of cell.

1395. **Narasodes punctana,** *Wlk. Cat.* xxviii, p. 431; *Moore, Lep. Ceyl.* iii. pl. 211, fig. 7.

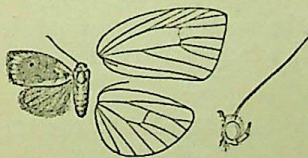



Fig. 57.
Narasodes punctana, ♂. 3/2.

♂. Head and thorax ochreous. Fore wing suffused with reddish brown except the margins, which are ochreous; a raised tuft of dark scales at end of cell, a few scattered black scales near vein 1; some minute black specks at apex. Abdomen and hind wing pale fuscous.

Hab. Ceylon. *Exp.* 16 millim.

Genus DIDUGA.

Diduga, *Moore, Lep. Ceyl.* iii, p. 535 (1887).
Androstigma, *Hmpsn. Ill. Het.* ix, p. 82 (1893).

Type, *D. costata*, Moore.
Range. Nilgiris; Ceylon.
Palpi slender and obliquely porrect. Tibiæ with the spurs long. Fore wing with vein 3 from before angle of cell; 4 and 5 from the angle; 6 from upper angle; 7 and 8 stalked. Hind wing with vein 4 from angle of cell; 5 from above the angle; 3 absent; 6 and 7 stalked. Fore wing of male with a costal fold acting as the retinaculum.

SECT. I. (*Diduga*). Antennæ of male ciliated. Hind wing with no patch of differently-formed scales near anal angle.

1396. **Diduga fumipennis,** *Hmpsn. Ill. Het.* viii, p. 52, pl. 140, fig. 7.

♂. Head and collar yellow; thorax and fore wing smoky brown; the latter with the costa blackish and with a yellow spot at centre; cilia yellowish towards outer angle. Abdomen and hind wing slightly paler.
Hab. Nilgiri plateau. *Exp.* 19 millim.

1397. **Diduga costata,** *Moore, Lep. Ceyl.* iii, p. 535.
Diduga fulvicosta, *Hmpsn. Ill. Het.* viii, p. 52, pl. 140, fig. 16.

Head, collar, and tegulæ bright yellow; thorax and fore wing dark leaden grey; the latter with the costal area bright yellow irrorated with a few black scales and with its lower edge waved; the costa black near base and with ante- and postmedial black specks; a marginal bright yellow band with a pale waved inner edge; cilia orange-yellow. Abdomen and hind wing paler.

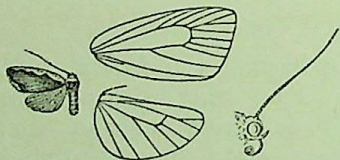



Fig. 58.—*Diduga costata*, ♂. 1/1.

The form *fulvicosta* from the Nilgiris has the marginal band of fore wing reduced to a spot above outer angle.
Hab. Nilgiri plateau; Ceylon. *Exp.* 16–18 millim.

SECT. II. (*Androstigma*). Male with the antennæ bipectinated, the branches short. Hind wing with a large patch of modified scales near anal angle.

1398. **Diduga albicosta,** *Hmpsn. Ill. Het.* viii, p. 53, pl. 140, fig. 17; *Ill. Het.* ix, p. 82, pl. 158, fig. 25.

Head, collar, tegulæ, and prothorax white; meso- and metathorax dull leaden grey. Fore wing dark leaden grey; a white

band on costal area, with a few dark scales on it and its lower edge waved; some white spots on outer margin, either large and conjoined or small and separated. Abdomen and hind wing paler; the latter with a large circular patch of modified scales near anal angle.

Hab. Nilgiri plateau; Ceylon. *Exp.* 14 millim.

Genus PSEUDOBLABES.

Pseudoblabes, *Zell. Bull. Soc. Nat. Mosc.* xxvi, pt. 2, p. 514 (1853).

Type, *P. oophora*, Zell.

Range. Assam; Ceylon; Burma.

Palpi slight and porrect. Antennæ of male ciliated. Tibiæ with the spurs long. Fore wing broad, the costa highly arched; vein 3 from close to angle of cell; 5 absent; 6 from below upper angle; 7, 8, 9 stalked; 10 absent. Hind wing of male with a patch of modified scales on the costal vein; the apex excised; veins 3 and 5 absent, the cell open; female with vein 3 absent; 5 from above angle of cell; 6 and 7 stalked; 8 from middle of cell, which is closed. Fore wing with a large costal fold in male, small in female.

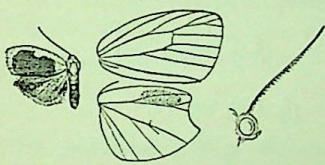
1399. **Pseudoblabes oophora**, *Zell. Bull. Soc. Nat. Mosc.* xxvi, pt. 2, 1853, p. 514, pl. 4, figs. 1–6.

Conchylis flavicostana, *Wlk. Cat.* xxviii, p. 361; *C. & S.* no. 4757.

♂. Head and thorax yellowish white. Fore wing dark leaden grey; the basal, costal, and outer areas yellowish white; the costal band expanding into a patch at centre. Hind wing ochreous; the marginal area slightly suffused with fuscous.

Fig. 59.
Pseudoblabes oophora, ♂. ½.

♀ with the hind wing fuscous; the cilia yellow.

Hab. Assam; Ceylon; Burma. *Exp.*, ♂ 18, ♀ 20 millim.

Genus GARUDINIA.

Garudinia, *Moore, Lep. Ceyl.* ii, p. 59 (1882).

Type, *G. latana*, Wlk.

Range. Ceylon; Borneo.

Palpi upturned, slender, and not reaching vertex of head. Antennæ minutely ciliated. Fore wing narrow, the costa arched; veins 3 and 4 stalked; 5 absent; 6 from below angle of cell; 7 and 8 stalked; 10 absent; male with a patch of modified scales in the cell. Hind wing of male excised at apex, vein 6 absent; female with veins 3 and 4 stalked; 5 from above angle of cell; 6 and 7 stalked; 8 from middle of cell. Fore wing of male with a large costal fold, female with a small one.

1400. **Garudinia latana,** *Wlk. Cat.* xxviii, p. 427; *Moore, Lep. Ceyl.* ii, pl. 103, fig. 2; *C. & S.* no. 736.

♂. Head and thorax white; abdomen yellowish white. Fore wing white, with a purplish-brown subbasal blotch from the subcostal nervure to inner margin; a submarginal band broad at costa and centre. Hind wing white; the apex suffused with fuscous.

Hab. Ceylon. *Exp.*, ♂ 16, ♀ 19 millim.

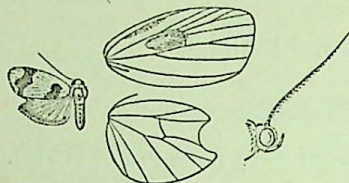



Fig. 60.—*Garudinia latana*, ♂. 1/1.

Genus PADENIA.

Padenia, *Moore, Lep. Ceyl.* ii. p. 58 (1882).

Type, *P. transversa*, Wlk.

Range. Ganjam; Nilgiris; Ceylon; Andamans; Sumatra.

Palpi porrect, reaching beyond the frons. Antennæ minutely ciliated in both sexes; tibiæ with the spurs long. Fore wing with the costa highly arched: male with veins 3 and 4 from far before end of cell; 5 and 6 absent; 7, 8, 9 stalked: female with vein 3 from near angle of cell; 4 and 5 stalked; 6 absent. Hind wing of male excised at apex, with a fringe of long hair on apical portion of costa; vein 6 absent: female with veins 3 and 4 stalked; 5 from angle of cell; 6 and 7 stalked; 8 from near end of cell. Fore wing of male with a strong costal fold; female with a slight fold.

1401. **Padenia transversa,** *Wlk. Cat.* ii, p. 544; *Moore, Lep. Ceyl.* ii, pl. 103, fig. 1; *C. & S.* no. 641.
Lithosia bifasciata, *Feld. Reis. Nov.* pl. 106, fig. 11.

Head, thorax, and abdomen yellowish white, suffused with fuscous. Fore wing yellowish white, with ante- and postmedial slightly angled fuscous bands. Hind wing yellowish white, with a slight fuscous tinge.

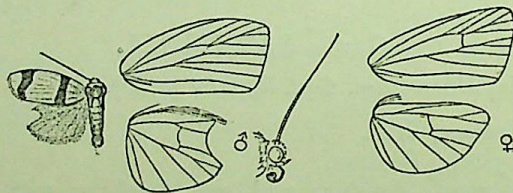



Fig. 61.—*Padenia transversa*, ♂. 1/1.

Nilgiri specimens have the bands broader than in the Ceylon form; in the Sumatran form the colour is pure white, the bands with a coppery tinge.

Hab. Ganjam; Nilgiris; Ceylon; Andamans; Sumatra. *Exp.* 20 millim.

Genus EUGOA.

Eugoa, *Wlk. Cat.* xii, p. 768 (1857).

Type, *E. æqualis*, Wlk., from Borneo.
Range. Assam; S. India and Ceylon; Burma; Borneo.
Palpi porrect, reaching beyond the frons. Antennæ of male minutely ciliated. Fore wing with veins 6, 7 and 8, 9 stalked. Hind wing with veins 6 and 7 stalked; 8 from middle of cell.

SECT. I. Fore wing with veins 4 and 5 stalked; 11 anastomosing with 12. Hind wing with vein 5 absent.

1402. **Eugoa bipunctata**, *Wlk. Journ. Linn. Soc.* vi, p. 115.
Padenia trifasciata, *Moore, Lep. Ceyl.* iii, p. 534, pl. 212, fig. 14.
Padenia basipuncta, *Hmpsn. Ill. Het.* viii, p. 49, pl. 139, fig. 8.

Head, thorax, and abdomen greyish or brownish fuscous; thorax spotted with black. Fore wing grey, irrorated with fuscous; a black spot at base; a diffused and slightly angled antemedial band; two obliquely placed black spots at end of cell; a curved postmedial line, the area beyond it suffused with fuscous; a highly dentate submarginal line. Hind wing pale ochreous, suffused with fuscous.

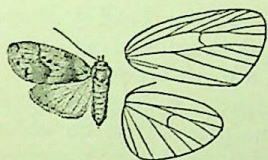



Fig. 62.
Eugoa bipunctata, ♂. 1/1.

The Nilgiri form *basipuncta* is paler than the Bornean and Assamese form; the Ceylon form *trifasciata* has the bands of the fore wing narrower.
Hab. Assam; Nilgiris; Ceylon; Burma; Borneo. *Exp.* 26–28 millim.

SECT. II. Fore wing with veins 4 and 5 from cell, 11 not anastomosing with 12. Hind wing with veins 4 and 5 stalked

1403. **Eugoa strigivenata**, n. sp.

♂. Head and thorax white, the latter spotted with black. Fore wing white; a series of black streaks from the base to the middle with clubbed or forked ends; three black specks in the cell; the veins of the outer area with clubbed or forked streaks ending before the margin. Abdomen and hind wing yellow.
Hab. E. Pegu (*Doherty*). *Exp.* 26 millim. Type in coll. Elwes.

1404. **Eugoa roseivena**, n. sp.

♀. Head, thorax, and abdomen crimson. Fore wing orange; the veins and margins streaked with crimson; cilia orange. Hind wing crimson.
Hab. Momeit, Burma (*Doherty*). *Exp.* 26 millim. Type in coll. Elwes.

Genus ANACHROSTIS.

Anachrostis, *Hmpsn. Ill. Het.* ix, p. 98 (1893).

Type, *A. nigripuncta*, Hmpsn.
Range. N.W. Himalayas; Ceylon.
Palpi upturned, the second joint reaching vertex of head; antennæ minutely ciliated. Fore wing with vein 5 from angle of cell; 6 from below upper angle; 7 from the angle; 8 and 10 stalked; 9 absent. Hind wing with veins 3 and 4 stalked; 5 absent.

Sect. I. Palpi with the 3rd joint minute: fore wing broad; hind wing with veins 6 and 7 stalked.

1405. **Anachrostis nigripuncta,** *Hmpsn. Ill. Het.* ix, p. 98, pl. 162, fig. 19.

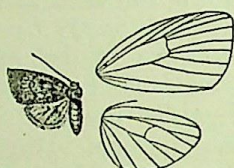



Fig. 63.—*Anachrostis nigripuncta*, ♀. ½.

♀. Pale yellowish brown; head yellowish. Fore wing with dark undulating ante- and postmedial lines; a black speck on discocellulars; an indistinct diffused waved submarginal line; some pale strigæ on costa towards apex; a series of black marginal specks. Hind wing ochreous, tinged with fuscous.
Hab. Ceylon. *Exp.* 17 millim.

Sect. II. Palpi with the 3rd joint longer: fore wing narrower; hind wing with veins 6 and 7 from cell.

1406. **Anachrostis bifasciata,** n. sp.

♀. Pale yellowish brown. Fore wing with a smoky-black diffused antemedial somewhat irregular band, with a black line on its outer edge; a postmedial band broad at the costa and narrowing to inner margin, with a black line on its inner edge, angled outwards at middle, and its outer edge irregular; a marginal series of black specks. Hind wing pale fuscous.
Hab. Murree; Simla (*Harford*). *Exp.* 20 millim. Type in B. M.

1407. **Anachrostis inconstans,** *Moore, P. Z. S.* 1888, p. 393; *Butl. Ill. Het.* vii, pl. 122, fig. 11.

♂. Pale brownish ochraceous. Fore wing with two antemedial black specks; a spot at end of cell and speck below the end; a marginal series of specks.
One specimen has a fuscous patch on costa of fore wing before apex.
Hab. Kángra. *Exp.* 19 millim.

Genus TRISCHALIS, nov.

Type, *T. flava*, Hmpsn.

Range. Nága Hills; Burma; Ceylon; New Britain.

Palpi slight and porrect. Antennæ minutely ciliated in male. Fore wing short, broad, and rounded, the costa arched; veins 4 and 5 stalked; 6, 7 and 8, 9 stalked. Hind wing with veins 4 and 5 stalked; 6 and 7 stalked; 8 from middle of cell.

1408. **Trischalis flava**, *Hmpsn. Ill. Het.* ix, p. 83, pl. 158, fig. 5.

Head, thorax, and abdomen yellow. Fore wing yellow; a broad fuscous band below the costa, commencing as a patch on the inner basal area and curving round to outer angle. Hind wing pale yellow.

Fig. 64.—*Trischalis flava*, ♂. 1/1.

A large specimen from the Nága Hills (20 millim.) has the band on fore wing narrow and terminating before the outer angle.

Hab. Nága Hills; Ceylon. *Exp*. 14–20 millim.

1409. **Trischalis dulcicula**, *Swinh. Trans. Ent. Soc.* 1890, p. 183.

♀. Head and prothorax orange; meso- and metathorax purplish grey. Fore wing purplish grey; a broad orange band from the base along the costal and outer areas with a dark line, on which are a few leaden scales, defining the two colours. Hind wing pale fuscous; the margins and cilia ochreous.

Hab. Rangoon; Ceylon. *Exp*. 14 millim.

Genus TROPACME, nov.

Type, *T. cupreimargo*, Hmpsn.

Range. Burma.

Palpi minute; antennæ simple in female; tibiæ with the spines rather long. Fore wing with the costa highly arched; the apex turned over below; the outer margin oblique; vein 3 from before angle of cell; 4 and 5 from the angle; 6 and 7 from upper angle; 8 and 9 stalked from before angle. Hind wing with vein 3 from before angle of cell; 4 and 5 on a long stalk; 6 and 7 stalked.

1410. **Tropacme cupreimargo**, n. sp.

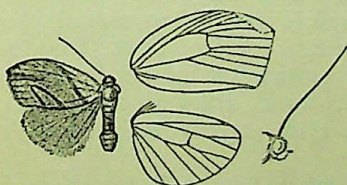



Fig. 65.
Tropacme cupreimargo, ♀. 1/1.

♀. Ochreous; abdomen tinged with fuscous. Fore wing with oblique ante- and postmedial lines, obsolete towards costa; the outer margin cupreous pink, especially at outer angle.

Hab. Tenasserim Valley (*Doherty*). *Exp*. 18 millim. Type in coll. Druce.

Genus NOTATA.

Notata, *Hmpsn. Ill. Het.* viii, p. 47 (1891).

Type, *N. parva*, Hmpsn.
Range. Nilgiris.
Palpi porrect and minute. Antennæ minutely ciliated in male. Fore wing of male with a large patch of modified scales in cell on underside; veins 4 and 5 from angle of cell; 6 from below upper angle; 7, 8 and 9, 10 stalked. Hind wing with a large patch of modified scales below the costa and in and beyond cell; veins 4 and 5 from angle of cell; 6 and 7 stalked; 8 from middle of cell.

1411. **Notata parva**, *Hmpsn. Ill. Het.* viii, p. 48, pl. 139, fig. 5.

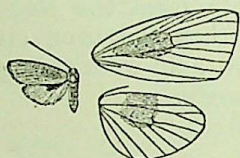



Fig. 66.
Notata parva, ♂. 1/1.

♂. Pale straw-colour; the hind wing paler; the patches of modified scales on the underside of fore wing and upperside of hind wing fuscous.
Hab. Nilgiris. *Exp.* 16 millim.

Genus HOLOCRASPEDUM.

Holocraspedon, *Hmpsn. Ill. Het.* ix, p. 83 (1893).

Type, *H. nigropunctum*, Hmpsn.
Range. Ceylon.
Palpi porrect, reaching beyond the frons. Antennæ ciliated in male. Fore wing with veins 4 and 5 from angle of cell; 6 from below upper angle; 7, 8 and 9, 10 stalked. Hind wing with veins 4 and 5 from angle of cell; 6 and 7 stalked; 8 from near end of cell.

1412. **Holocraspedum nigropunctum**, *Hmpsn. Ill. Het.* ix, p. 84, pl. 158, fig. 4.

♂. Head, thorax, and abdomen white; thorax spotted with black. Fore wing white; some black on base of costa; a curved antemedial black line; a spot in the cell and a spot at end of it; a postmedial line excurved round end of cell and joining the antemedial line at inner margin; some black streaks beyond the postmedial line; a marginal series of short lines. Hind wing yellowish white; the apex slightly suffused with fuscous.

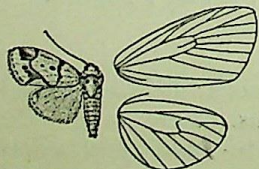



Fig. 67.—*Holocraspedum nigropunctum*, ♂. 1/1.

Cocoon suspended by a cord and formed of network strengthened by two cross bands.
Hab. Nawala-pittia, Ceylon. *Exp.* 20 millim.

Genus TRICHOGYIA, nov.

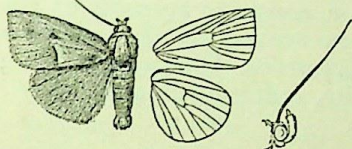
Type, *T. semifascia*, Hmpsn.
Range. Burma.

♂. Palpi upturned, the 2nd joint reaching above vertex of head, the 3rd short; antennæ minutely ciliated; tibiæ hairy. Fore wing short and broad; the apex nearly rectangular, the inner margin much arched; veins 2 and 3 from near angle of cell and much bent at base; 4 and 5 from the angle; 6 and 7 from close to upper angle; 8, 9, 10 stalked from before the angle. Hind wing ample; veins 3 and 4 stalked; 5 from above angle of cell; 6, 7 from cell.

1413. **Trichogyia semifascia**, n. sp.

♂. Dark red-brown; head fulvous. Fore wing with a black speck at end of cell and an incurved white narrow band from it to inner margin; an obscure dark mark beyond the cell.

Fig. 68.—*Trichogyia semifascia*, ♂. $\frac{3}{2}$.

Hab. Tenasserim (*Doherty*). *Exp.* 20 millim. Type in coll. Druce.

Genus IDOPTERUM, nov.

Type, *I. ovale*, Hmpsn.
Range. Sikhim; Bhután; Nágas; Burma.

Palpi short and porrect. Antennæ ciliated in male, almost simple in female, in which the abdomen has the two terminal segments suddenly expanded to double the width of the basal segments. Fore wing with the costa arched; the apex rounded; the outer margin very obliquely curved; vein 3 from before angle of cell; 4 and 5 from angle; 6 from upper angle; 7, 8, 9 stalked; 10 and 11 from before the angle. Hind wing with vein 3 from before the angle of cell; 5 from above angle; 6 and 7 stalked; 8 from middle of cell.

SECT. I. Fore wing with vein 9 given off from 8 nearer the apex than 7.

A. *Fore wing, vein* 11 *not anastomosing with* 12.

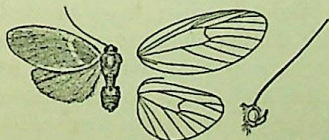
1414. **Idopterum ovale**, n. sp.

♀. Head whitish; thorax and abdomen pale fuscous. Fore wing pale fuscous; the costal and inner margin whitish; an obliquely curved antemedial whitish band. Hind wing pale fuscous, the inner and outer margins whitish.

Fig. 69.—*Idopterum ovale*, ♀. $\frac{1}{1}$.

Hab. Bernardmyo, Burma (*Doherty*). *Exp.* 27 millim. Type in coll. Elwes.

B. *Fore wing, vein* 11 *anastomosing with* 12.

1415. **Idopterum rubrimargo**, n. sp.

♂. Head, thorax, and abdomen fuscous; frons, collar, and tegulæ crimson. Fore wing fuscous; the costa, inner margin, and cilia crimson; black basal and subbasal spots; two antemedial blackish nearly straight and erect lines; a black spot at end of cell. Hind wing fuscous; the inner area tinged with crimson.

Hab. Sikhim. *Exp.* 26 millim. Type in coll. Elwes.

SECT. II. Fore wing with vein 9 given off from 8 further from apex than 7.

1416. **Idopterum dudgeoni**, *Elw. P. Z. S.* 1890, p. 388, pl. 32, fig. 10.

♀. Head and tegulæ ochreous, frons white; collar, thorax, and abdomen fuscous. Fore wing with the margins pale, the whole disk suffused with fuscous; the base, costa, and apex white; the inner and outer margins ochreous; an ochreous streak from the base through the cell to outer margin; cilia fuscous. Hind wing fuscous; the basal area and outer margin white, suffused with ochreous.

Hab. Sikhim. *Exp.* 24 millim.

1417. **Idopterum anomalum**, *Elw. P. Z. S.* 1890, p. 388, pl. 32, fig. 14.

Head and thorax crimson. Fore wing crimson, with a black streak from base of cell to centre of outer margin; the median nervure pale. Abdomen and hind wing smoky black.

Hab. Sikhim, 5000 feet; Bhután; Nágas; Upper Burma. *Exp.*, ♂ 26, ♀ 34 millim.

Genus **SCAPTESYLE**.

Scaptesyle, *Wlk. Cat.* ii, p. 378 (1854).

Type, *S. tricolor*, Wlk.

Range. Assam; Burma; Ceylon.

Palpi upturned reaching vertex of head; antennæ of male minutely ciliated. Tibiæ with the spurs long. Fore wing with veins 4 and 5 stalked; 6 from below angle of cell; 7, 8, 9 stalked. Hind wing with veins 3 and 4 stalked; 5 from above angle of cell; 6 and 7 stalked; 8 from middle of cell.

1418. **Scaptesyle tricolor**, *Wlk. Cat.* ii, p. 378; *C. & S.* no. 364.

Head, thorax, and abdomen brownish black; the third joint of palpi and basal joint of antennæ in front white; legs banded with white; collar and tegulæ bright yellow; a white tuft at end of abdomen. Wings bright crocus-yellow; fore wing with a basal black patch, the outer area bright coppery red, with its edges black; hind wing with an apical black patch narrowing to anal angle.

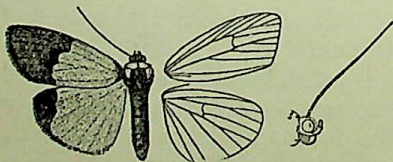



Fig. 70.—*Scaptesyle tricolor*, ♂. 1/1.

Hab. Silhet; Burma. *Exp.* 32 millim.

1419. **Scaptesyle bicolor,** *Wlk. Cat.* xxxi, p. 182; *Moore, Lep. Ceyl.* ii, pl. 96, fig. 2; *C. & S.* no. 363.
Dichromia nietneri, *Feld. Reis. Nov.* pl. 106, fig. 25.

Differs from *tricolor* in being deep black and bright golden yellow; fore wing with the outer area broader and wholly black; hind wing with the marginal black area much broader and reaching anal angle.

In the specimen from the Khásis the marginal black band is much narrower than in typical Ceylon specimens.

Hab. Khásis; Ceylon. *Exp.* 30 millim.

Genus GURNA.

Gurna, *Swinh. Cat. Het. Mus. Oxon.* p. 123 (1892).

Type, *G. indica*, Moore.

Range. Bombay.

Palpi very minute. Antennæ minutely ciliated in male. Mid and hind tibiæ with very minute terminal pairs of spurs. Fore wing rather narrow; veins 4 and 5 from angle of cell; 6 from below upper angle; 7, 8, 9 stalked. Hind wing with veins 4 and 5 from angle of cell; 6 and 7 stalked; 8 from beyond middle of cell.

1420. **Gurna indica,** *Moore, P. Z. S.* 1879, p. 390; *C. & S.* no. 276.

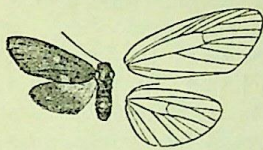



Fig. 71.
Gurna indica, ♂. ½.

Liver-brown; frons yellow; tegulæ with the posterior half orange; abdomen with the extremity orange. Fore wing with a large yellow spot in the cell just beyond the middle, and another at centre of outer margin. Hind wing with the basal half orange.

Hab. Bombay. *Exp.* 28–30 millim.

Genus NEPITA.

Nepita, *Moore, Lep. E. I. Co.* p. 302 (1858).
Pitane, *Wlk. Cat.* ii, p. 531 (1854), præocc.
Cabarda, *Wlk. Cat.* xxviii, p. 435 (1863).
Adites, *Moore, Lep. Ceyl.* ii, p. 61 (1882).

Type, *N. conferta*, Wlk.

Range. Throughout India, Ceylon, and Burma; Borneo.

Palpi porrect, extending beyond the frons, and fringed with hair below. Antennæ roughly scaled. Tibiæ with the spurs rather long. Fore wing rather short and broad; veins 3, 4, 5 from close to angle of cell; 6 from below upper angle; 7, 8, 9 stalked; 11 sometimes anastomosing with 12. Hind wing with veins 4 and 5 stalked; 6 and 7 from angle of cell or stalked; 8 from beyond middle of cell.

SECT. I. (*Nepita*). Male with the antennæ bipectinated, the branches short.

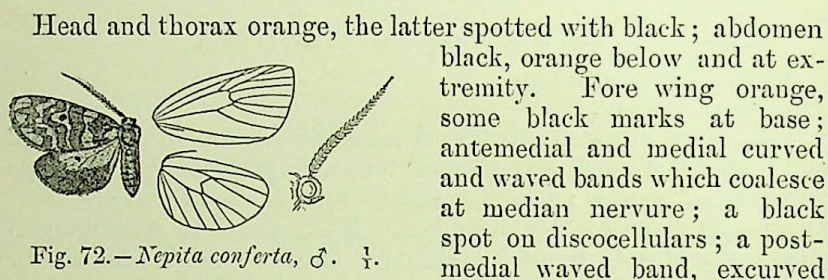
1421. **Nepita conferta**, *Wlk. Cat.* ii, p. 533; *Moore, Lep. Ceyl.* ii, pl. 104, figs. 7, 7 *a*, *b*, *c*, *d* (larva); *C. & S.* no. 644.
Nepita anila, *Moore, Cat. E. I. Co.* p. 302; *C. & S.* no. 643.
Nepita signata, *Wlk. Cat.* xxxi, p. 240.
Nepita ægrota, *Butl. Trans. Ent. Soc.* 1877, p. 336; *C. & S.* no. 642.
Nepita ochracea, *Butl. Trans. Ent. Soc.* 1877, p. 336; *C. & S.* no. 648.
Nepita limbata, *Butl. Trans. Ent. Soc.* 1877, p. 336; *C. & S.* no. 647.
Nepita conferta, var. fusca, *Hmpsn, Ill. Het.* ix, pl. 158, fig. 6.

Head and thorax orange, the latter spotted with black; abdomen black, orange below and at extremity. Fore wing orange, some black marks at base; antemedial and medial curved and waved bands which coalesce at median nervure; a black spot on discocellulars; a postmedial waved band, excurved round end of cell; a series of submarginal spots and streaks, often conjoined into a band; the margin and cilia black. Hind wing with the base orange; a broad marginal black band, some specimens with orange spots on it at centre of outer margin.

Fig. 72.—*Nepita conferta*, ♂. 1/1.

The forms *limbata* and *ochracea* have the bands of the fore wing rather narrow, *conferta*, *ægrota*, and *anila* broad: in *anila* and *limbata* the marginal band of the hind wing is narrowest; in *conferta* broader; in *ochracea* and *ægrota* very broad, and running up the inner margin towards the base.

In the Deltota district of Ceylon the brown suffused form *fusca* is found.

Larva short, tumid at middle; colour purple-black, each somite thickly covered with tufts of long black hair; some dorsal orange marks on first, seventh, and anal somites, and a slender line from seventh to anal somite.

Cocoon slight.

Hab. Throughout India, Ceylon, and Burma. *Exp.*, ♂ 22–28, ♀ 32–34 millim.

SECT. II. (*Cabarda*). Male with the antennæ ciliated.

1422. **Nepita hilaris**, *Wlk. Cat.* ii, p. 530; *Moore, Lep. Ceyl.* ii, pl. 104, fig. 6; *C. & S.* no. 646.

Head and thorax white, spotted with yellowish brown; abdomen white. Fore wing white; a blackish spot near the base; two subbasal yellowish-brown spots; antemedial and medial yellow-brown lines, the former waved, the latter irregularly curved; a blackish spot at end of cell; a waved postmedial line excurved round end

of cell; a submarginal series of more or less conjoined streaks; a marginal series of specks. Hind wing white, the outer margin slightly suffused with brown.

Hab. Ceylon. *Exp.*, ♂ 22, ♀ 24 millim.

1423. **Nepita frigida**, *Wlk. Cat.* ii, p. 530; *C. & S.* no. 645.
Lyclene diffusa, *Wlk. Journ. Linn. Soc.* vi, p. 111.

Head, thorax, and abdomen brownish white. Fore wing white; a basal yellowish-brown patch with a spot beyond it; a subbasal irregular brown band; the whole disk suffused with yellowish brown, leaving patches of white on the margins, and two curved series of postmedial white specks bent inwards below the cell, the brown area reaching almost to the margin, below apex and above outer angle; cilia spotted with pale brown. Hind wing white; the outer area slightly suffused with brown.

Specimens from Sikhim and the Nága Hills have the hind wing suffused with fuscous and a black spot at end of cell.

Hab. Sikhim; Nágas; Burma; Borneo. *Exp.*, ♂ 21, ♀ 24 millim.

Genus MILTOCHRISTA.

Miltochrista, *Hübn. Verz.* p. 166 (1818).
Sesapa, *Wlk. Cat.* ii, p. 547 (1854).
Lyclene, *Moore, Cat. E. I. Co.* p. 300 (1858).
Cyllene, *Wlk. Cat.* ii, p. 543 (præocc.).
Barsine, *Wlk. Cat.* ii, p. 546.
Setinochroa, *Feld. Reis. Nov.* p. 9 (1875).
Korawa, *Moore, P. Z. S.* 1878, p. 11.

Type, *M. miniata*, Forst., from Europe.

Range. Palæarctic, Æthiopian, Oriental, and Australian regions.

Palpi short and porrect. Antennæ with the cilia long in male, minute in female, or bipectinated in male.

Tibiæ with the spurs rather short. Fore wing with vein 5 from just above lower angle of cell; 6 from upper angle, or stalked with 7, 8, 9; 10 from close to the angle or some way before it; 11 from one-half to three-fourths length of cell and straight, or curved and running close along 12, or anastomosing with 12. Hind wing with vein 5 on a short stalk with 4, or from a point with it, or from above the angle; 6 and 7 stalked; 8 from near end of cell. These variations occur in similar specimens from the same localities.

SECT. I. (*Miltochrista*). Fore wing with the cell narrow; antennæ of male ciliated.

1424. **Miltochrista strigivenata**, n. sp.

♂. Head and thorax crimson; abdomen black with the base ochreous, the anal tuft ochreous, tipped with crimson. Fore wing bright crimson; the costa slightly black; a prominent oblique medial straight black line; the veins beyond the cell streaked with black. Hind wing paler.

Hab. Nága Hills, 6000 feet (*Doherty*). *Exp.* 25 millim. Type in coll. Elwes.

SECT. II. (*Barsinæ*). Fore wing with the cell broad; antennæ of male ciliated.

A. *Fore wing with an irregular and highly dentate postmedial line.*

a. *The ground-colour crimson.*

1425. **Miltochrista dentifascia**, n. sp.

♀. Pale crimson. Fore wing with some black specks near the base; slightly excurved antemedial and incurved medial lines; a spot at end of cell; a very highly dentate postmedial line commencing as an oblique line from the middle of costa, with a series of black specks beyond its angulations.

Hab. Momeit, Burma (*Doherty*). *Exp.* 25 millim. Type in coll. Elwes.

b. *The ground-colour ochreous.*

1426. **Miltochrista undulosa**, *Wlk. Cat.* ii, p. 545; *C. & S.* no. 639.
Miltochrista straminea, *Wlk. Cat.* vii, p. 1685; *C. & S.* no. 632.
Sesapa decurrens, *Wlk. Cat.* xxxi, p. 255; *C. & S.* no. 637.
Sesapa excurrens, *Wlk. Cat.* xxxi, p. 255; *C. & S.* no. 638.
Lyclene assamica, *Moore, P. Z. S.* 1878, p. 23, pl. 3, fig. 8; *C. & S.* no. 677.

Pale ochreous; the patagia and vertex of thorax spotted with black; the extremity of abdomen blackish in male. Fore wing with a black speck at base; a series of short subbasal streaks; a waved antemedial line; a doubly curved or nearly straight medial line, which is altogether obsolete in the form *assamica*; a spot at end of cell; an irregular highly dentate postmedial line; submarginal and marginal series of specks.

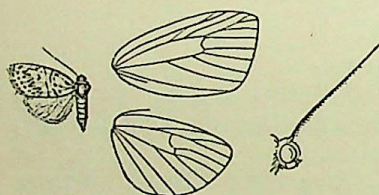



Fig. 73.—*Miltochrista undulosa*, ♂. 1/1.

The form *undulosa* from Moulmein is small (♂ 17 millim.), with the ground-colour of fore wing whitish. The Himalayan form is larger and more ochreous.

Hab. Kángra; Sikhim; Khásis; Moulmein. *Exp.*, ♂ 17–23, ♀ 28 millim.

1427. **Miltochrista complicata**, *Butl. Trans. Ent. Soc.* 1877, p. 344.

♀. Differs from *undulosa* in the antemedial line of the fore wing being more evenly curved; the medial line outwardly oblique towards inner margin; the marginal series of specks absent; the apical part of costa and cilia black. Hind wing slightly suffused with fuscous at apex or on disk.

Hab. Nága Hills; Borneo. *Exp.* 20 millim.

1428. **Miltochrista prominens**, *Moore, P. Z. S.* 1878, p. 31, pl. 3 fig. 3; *C. & S.* no. 689.

Differs from *delicata* in the thorax having two black spots. Fore wing with a black angulated line beyond the antemedial spots; the postmedial series taking the form of a highly denticulated and angulated line; the marginal streaks of both wings usually broader.

Hab. Khásis. *Exp.*, ♂ 32, ♀ 34 millim.

1429. **Miltochrista semifascia**, *Wlk. Cat.* ii, p. 521; *Moore, Lep. Ceyl.* ii, pl. 103, fig. 7; *Hmpsn. Ill. Het.* ix, pl. 175, fig. 7 (larva); *C. & S.* no. 649.

Lyclene semifascia, var. metamelas, *Hmpsn. Ill. Het.* ix, pl. 158, fig. 11.

Lyclene obsoleta, *Moore, P. Z. S.* 1878, p. 32, pl. 3, fig. 7; *C. & S.* no. 687.

Differs from *undulosa* in the antemedial and medial lines of the fore wings being reduced to a series of spots; the postmedial line more regularly dentate; the marginal series of specks absent; the disk often suffused with fuscous.

Some specimens have the outer margin of hind wing fuscous; the variety *metamelas* has the extremity of abdomen in male black; *obsoleta* has a black marginal band to hind wing and submarginal band from costa of hind wing on underside.

Larva thickly clothed with short close black hairs, which open out at the joints when it rolls itself into a ball.

Hab. Sikhim; Assam; throughout S. India and Ceylon. *Exp.*, ♂ 20, ♀ 25–26 millim.

c. *The ground-colour white.*

1430. **Miltochrista nigralba**, n. sp.

Head fulvous yellow, spotted with black; thorax white, spotted with black; abdomen fulvous. Fore wing white; a black spot at base; three antemedial lines, each composed of three black spots; a spot at end of cell; a highly dentate postmedial line sending off streaks along the subcostals; submarginal and cilial series of spots. Hind wing white, with traces of a medial band; the outer area suffused with fuscous, the veins crossing it black.

Hab. Bernardmyo; E. Pegu (*Doherty*). *Exp.*, ♂ 24, ♀ 28 millim. Type in coll. Elwes.

1431. **Miltochrista multistriata**, n. sp.

♂. Differs from *nigralba* in the thorax being fulvous, spotted with black. Fore wing with the two outer antemedial bands replaced by fine irregular lines starting from the same point on the costa; the veins on the outer area streaked with black in place of the specks; a fine marginal black line.

Hab. Nága Hills, 6000 feet (*Doherty*). *Exp.* 22 millim. Type in coll. Elwes.

B. *Fore wing with no postmedial line, the outer area streaked with black.*

a. *The ground-colour reddish.*

1432. **Miltochrista parallelina**, n. sp.

♀. Head, thorax, and abdomen ochreous. Fore wing reddish orange, a series of subbasal irregular black specks; an indistinct postmedial straight line; a spot on discocellulars; a series of submarginal streaks on the nervules.

Hab. E. Pegu (*Doherty*). *Exp.* 19 millim. Type in coll. Elwes.

b. *The ground-colour yellowish.*

1433. **Miltochrista linga**, *Moore, Cat. E. I. Co.* p. 301; *C. & S.* no. 702.

♂. Very pale yellow; collar and extremity of abdomen tinged with orange; tegulæ and thorax spotted with black. Fore wing with three black spots at base; antemedial and medial series, each of six spots; the veins of outer area streaked with black.

♀ with the head, collar, and abdomen fulvous yellow.

Hab. Kángra; Sikhim. *Exp.*, ♂ 38, ♀ 44 millim.

1434. **Miltochrista delicata**, *Moore, P. Z. S.* 1878, p. 31; *C. & S.* no. 679.

♀. Head, thorax, and abdomen ochreous. Wings ochreous; fore wing with basal and subbasal black spots; an antemedial series; a medial straight line; a spot at end of cell; a postmedial curved series; the veins of the marginal area streaked with black on fore and hind wing.

Hab. Sikhim. *Exp.* 31 millim.

1435. **Miltochrista palmata**, *Moore, P. Z. S.* 1878, p. 31, pl. 3, fig. 5; *C. & S.* no. 688.

♀. Head, thorax, and abdomen orange-yellow; mesothorax with paired black spots. Wings very pale yellow. Fore wing with three subbasal and three antemedial metallic blue-black spots, three medial purple-black spots; the interspaces of the outer half of wing streaked with purplish black, the streaks not reaching the outer margin. Hind wing with submarginal fuscous streaks, obsolescent towards anal angle.

A female from Simla has the markings of fore and hind wings very much reduced.

Hab. Simla; Kángra; Assam. *Exp.* 33 millim.

1436. **Miltochrista maculifasciata**, n. sp.

♀. Head, thorax, and abdomen orange-yellow; the thorax spotted with black. Fore wing pale flesh-colour; a basal blue-black spot; a subbasal series of three spots; two antemedial more

or less conjoined series; a spot at end of cell; the veins of the outer area broadly streaked with blue-black, the bases of the streaks enlarged and almost conjoined into a curved line. Hind wing pale flesh-colour; inner area yellowish; veins of outer area broadly streaked with blue-black.

Hab. Burma. *Exp.* 36 millim. Type in B. M.

1437. **Miltochrista strigipennis**, *Herr.-Schäffer, Samml. aussereur. Schmett.* no. 437.

Lyclene discistriga, *Moore, P. Z. S.* 1878, p. 32; *C. & S.* no. 680.
Lyclene terminata, *Moore, P. Z. S.* 1878, p. 33; *C. & S.* no. 692.
Lyclene sinica, *Moore, A. M. N. H.* (4) xx, 1877, p. 87.
Lyclene inconspicua, *Moore, P. Z. S.* 1878, p. 32; *C. & S.* no. 683.

Ochreous; fore wing with a series of basal streaks; a medial slightly curved line; outer area with fine black streaks on the veins.

The form *sinica*=*inconspicua* has a reddish-orange tone.

Hab. China; Sikhim; Khásis; Nágas; Tenasserim; Sumatra; Borneo. *Exp.*, ♂ 22, ♀ 33 mm.

C. *Fore wing with a series of postmedial specks or blotches conjoined into a band.*

1438. **Miltochrista fuscalis**, *Hmpsn. Ill. Het.* viii, p. 50, pl. 139, fig. 9.

♂. Head ochreous; thorax orange, the tegulæ and vertex spotted with black; abdomen fuscous, with an ochreous anal tuft. Fore wing fiery red; the costa and median nervure streaked with black at base; a large subbasal fuscous patch coalescing with an oblique band; a spot on discocellulars joined to a large patch occupying the whole outer area; cilia ochreous. Hind wing ochreous, with traces of an oblique medial band; some specimens with the apex suffused with fuscous.

Hab. Nilgiri plateau. *Exp.* 22–32 millim.

1439. **Miltochrista suffusa**, *Hmpsn. Ill. Het.* viii, p. 49, pl. 139, fig. 18.

♀. Head, thorax, and fore wing flesh-pink; abdomen fuscous, with an ochreous anal tuft. Fore wing with a basal black spot; a subbasal fuscous band coalescing with an oblique band; the discocellulars black; a curved postmedial band with some spots beyond it; a series of submarginal specks. Hind wing fuscous; the outer margin flesh-pink; cilia fuscous.

Hab. Nilgiris, W. slopes, 3000 feet. *Exp.* 28 millim.

1440. **Miltochrista rubricosa**, *Moore, P. Z. S.* 1878, p. 30, pl. 3, fig. 1; *C. & S.* no. 706.

Lyclene curvifascia, *Hmpsn. Ill. Het.* viii, p. 49, pl. 139, fig. 17.
Lyclene ochracea, *Hmpsn. Ill. Het.* viii, p. 51, pl. 139, fig. 26.

Differs from *suffusa* in the medial band of the fore wing being widely separated from the antemedial band; the postmedial band

more irregular, nearer the margin, and without spots beyond it. Hind wing flesh-pink; some specimens with traces of a medial band.

The form *rubricosa* has the medial band of fore wing oblique, the marginal specks almost obsolete; in *curvifascia* the band is more erect and the specks prominent; *ochracea* is ochreous with only a slight tinge of pink.

Hab. Bombay; Khandála; Nilgiris; Ceylon. *Exp.*, ♂ 20, ♀ 22–26 millim.

1441. **Miltochrista arcuata**, *Moore, Lep. Ceyl.* ii, p. 62, pl. 103, fig. 5; *C. & S.* no. 675.
Lyclene rosea, *Hmpsn. Ill. Het.* viii, p. 50, pl. 139, fig. 19.
Lyclene aurora, *Hmpsn. Ill. Het.* viii, p. 50, pl. 139, fig. 20.

Differs from *rubricosa* in being pinker, the subbasal band being reduced to a series of irregularly placed specks; the medial band narrow and more erect; the postmedial band reduced to irregularly placed spots.

In the form *arcuata* the medial band is slightly curved, in *rosea* and *aurora* straight; the last has the band very narrow and the subbasal and postmedial specks almost obsolete.

Hab. Nilgiris; Ceylon. *Exp.*, ♂ 20, ♀ 22 millim.

1442. **Miltochrista ila**, *Moore, Lep. E. I. Co.* p. 300; *id. Lep. Ceyl.* ii, pl. 103, fig. 6; *C. & S.* no. 682.

Differs from *ruptifascia* in the subbasal and postmedial bands of the fore wing being reduced to series of specks; the medial band broad, regular, and nearly erect; a marginal series of specks.

Hab. Canara; Ceylon. *Exp.* 22–24 millim.

1443. **Miltochrista solita**, *Wlk. Cat.* ii, p. 521; *Moore, Lep. Ceyl.* ii, pl. 103, fig. 8; *C. & S.* no. 726.
Setina punctilinea, *Moore, P. Z. S.* 1878, p. 34; *id. Lep. Ceyl.* ii, pl. 103, fig. 9; *C. & S.* no. 653.

♂. Differs from *ila* in the medial band of both wings being obsolete. Fore wing in male with the medial and postmedial series of specks almost entirely obsolete; fairly well marked in female.

Hab. Ceylon. *Exp.*, ♂ 24, ♀ 26 millim.

1444. **Miltochrista magna**, n. sp.

♀. Head, thorax, and abdomen pale lemon-yellow. Fore wing lemon-yellow, the veins paler; a black spot at base; a curved postmedial series of indistinct fuscous specks. Hind wing ochreous white.

Hab. Manipur; Bernardmyo (*Doherty*). *Exp.* 48 millim. Type in coll. Elwes.

1445. **Miltochrista pallida,** *Moore, P. Z. S.* 1878, p. 12; *C. & S.* no. 572.

Head, thorax, and abdomen white; collar orange. Fore wing uniform very pale ochreous, the cilia white. Hind wing white.

Hab. Sikhim. *Exp.*, ♂ 38, ♀ 55 millim.

1446. **Miltochrista sexpuncta,** n. sp.

♂. Ochreous. Fore wing with a black spot at base; a prominent spot above centre of cell, one at end of cell, with one below it above inner margin and two spots near centre of outer margin. Abdomen and hind wing paler.

Hab. Bernardmyo, Burma, 6000 feet (*Doherty*). *Exp.* 26 millim. Type in coll. Elwes.

1447. **Miltochrista spilosomoides,** *Moore, P. Z. S.* 1878, p. 33; *C. & S.* no. 691.

♂. Head, thorax, and abdomen yellowish white, the last ochreous at extremity; tegulæ and shoulders with black spots. Wings yellowish white; fore wing with a black spot at base and ante- and postmedial series of black specks.

Hab. "N.W. India." *Exp.* 44 millim.

1448. **Miltochrista dharma,** *Moore, P. Z. S.* 1879, p. 394; *C. & S.* no. 650.

Differs from *solita* in the postmedial series of specks being nearer the marginal series; the medial and marginal series of specks absent; all the specks larger and more prominent.

A male from the Nága Hills has the subbasal series of spots of fore wing absent.

Hab. N.W. Himalayas; Nága and Karen Hills. *Exp.* 28 millim.

1449. **Miltochrista infumata,** *Feld. Reis. Nov.* pl. 106, fig. 16; *C. & S.* no. 718.

Setinochroa postica, *Moore, P. Z. S.* 1878, p. 36; *C. & S.* no. 720.
Setinochroa pallida, *Moore, P. Z. S.* 1878, p. 35; *C. & S.* no. 719.
Setina decisigna, *Moore, P. Z. S.* 1878, p. 35; *C. & S.* no. 651.

Head, thorax, and abdomen orange-yellow. Fore wing orange-yellow, with a black speck at base; a prominent spot at end of cell, a submarginal series of seven spots. Hind wing smoky black; a black line on discocellulars; the inner area more or less suffused with orange; cilia orange.

Hab. N.W. Himalayas. *Exp.* 25 millim.

1450. **Miltochrista fuscifusa,** *Swinh. MS.*

♂. Differs from *infumata* in the fore wing being without the submarginal series of black spots; hind wing slightly suffused with fuscous.

Hab. Khásis. *Exp.* 30 millim. Type in B. M.

1451. **Miltochrista cylletona**, *Swinh. A. M. N. H.* (6) xii, p. 217.

♂. Differs from *infumata* in the fore wing having two antemedial black specks; a black marginal band from centre of costa to apex and outer angle; hind wing with black marginal band; underside of fore wing not black.

Hab. Shán States. *Exp.* 20 millim.

1452. **Miltochrista aurantiaca**, *Moore, P. Z. S.* 1878, p. 35, pl. 3, fig. 12; *C. & S.* no. 717.

♂. Differs from *infumata* in having two subbasal black spots on fore wing beyond the basal spot; the apical spot of the submarginal series and those in interno-median interspace obsolete. Hind wing with the basal area more suffused with orange.

Hab. Khásis. *Exp.* 24 millim.

1453. **Miltochrista obliqua**, *Hmpsn. Ill. Het.* viii, p. 51, pl. 139, fig. 25.

♂. Differs from *rubricosa* in being pale ochreous; the medial line of fore wing straight, narrow, and oblique; abdomen fuscous, with the anal tuft ochreous.

Hab. Nilgiri plateau. *Exp.* 28 millim.

1454. **Miltochrista congerens**, *Feld. Reis. Nov.* pl. 106, fig. 14; *C. & S.* no. 678.

Lyclene artocarpi, *Moore, P. Z. S.* 1878, p. 30; *C. & S.* no. 676.

Differs from *rubricosa* in being more ochreous; the marginal series of specks on fore wing absent.

Hab. N.W. Himalayas; Sikhim; Calcutta. *Exp.* 21 millim.

1455. **Miltochrista ruptifascia**, *Hmpsn. Ill. Het.* ix, p. 85, pl. 158, fig. 12.

Differs from *congerens* in being pure ochreous; the subbasal band of fore wing outwardly oblique towards inner margin, and anastomosing with the medial band; the upper portion of the postmedial band reduced to a series of specks. Hind wing with a well-defined medial fuscous band.

Hab. Ceylon. *Exp.* 18 millim.

1456. **Miltochrista floccosa**, *Wlk. Cat.* xxxi, p. 274; *C. & S.* no. 723.

♀. Semidiaphanous pale brownish ochreous. Fore wing with indistinct subbasal and medial fuscous bands; a spot on discocellulars; postmedial and marginal series of specks.

Hab. Coimbatore. *Exp.* 22 millim.

1457. **Miltochrista subcervina**, *Wlk. Cat.* xxxi, p. 274; *C. & S.* no. 727.

♂. Differs from *floccosa* in being of an orange tone; the antemedial, medial, and postmedial bands of fore wing better defined.

Hab. Ganjam. *Exp.* 18 millim.

1458. **Miltochrista nubilalis**, n. sp.

♂. Head yellow; thorax and abdomen fuscous. Fore wing semihyaline yellow; a large basal fuscous patch joined on inner margin by a very broad fuscous postmedial band. Hind wing yellow; an indistinct fuscous medial band, narrow at costa, broad at inner margin, where it nearly reaches the anal angle.

Hab. Ganjam (*Minchin*). *Exp.* 20 millim. Type in coll. Druce.

1459. **Miltochrista humilis**, *Wlk. Cat.* ii, p. 544; *C. & S.* no. 681.
Setina calamaria, *Moore, P. Z. S.* 1888, p. 392; *C. & S.* no. 649 A.
Setina nebulosa, *Moore, P. Z. S.* 1878, p. 35; *C. & S.* no. 652.
Setina dasara, *Moore, Lep. E. I. Co.* p. 303.
Barsine chromatica, *Swinh. Trans. Ent. Soc.* 1891, p. 135.
Setina? punctata, *Elwes, P. Z. S.* 1890, p. 389, pl. 32, fig. 18.

Bright ochreous. Fore wing with a dark speck at base; a curved postmedial band; a dark spot at end of cell; a postmedial band of irregular fuscous blotches. Hind wing in some specimens with traces of a submarginal fuscous band.

The form *humilis* from Burma (♀ 22 millim.) has the postmedial band broad on the disk and widely separated from the antemedial band; in *dasara*=*chromatica*, from Kángra, the Nilgiris, Sumatra, Java (30 millim.), the band is narrower, much more irregular, and often conjoined to the antemedial band below the cell; in *nebulosa*, from Sikhim (♀ 32 millim.), the antemedial band expands into a large patch on inner margin conjoined to the postmedial band, which is very broad and occupies the whole disk; the hind wing whitish.

The form *calamaria*=*punctata* has all the markings obsolete, except the black spots at base and end of cell of fore wing.

Hab. Punjab; Sikhim; Nágas; Nilgiris; Moulmein; Java. *Exp.* 22–32 millim.

1460. **Miltochrista varians**, *Hmpsn. Ill. Het.* ix, p. 85, pl. 158, figs. 10, 20, 32, 33.

♂. Head and thorax orange, the latter spotted with black; abdomen and wings black; fore wing with a slight bronzy tinge; a black speck at end of cell.

In another form the fore wing has a basal orange spot, medial spots on costa and inner margin, the apex streaked with orange.

♀. With an anal ochreous tuft; fore wing with the base orange, two costal spots and one on inner margin; the outer margin orange, with a series of black specks.

In another form the fore wing is mostly orange with a basal black spot; an irregular antemedial line conjoined to an irregular medial patch and postmedial band; hind wing suffused in parts with ochreous.

Hab. Ceylon. *Exp.* 20 millim.

1461. **Miltochrista andamana**, *Moore, P. Z. S.* 1877, p. 597; *C. & S.* no. 636.

♀. Pale ochreous; thorax spotted with black. Fore wing

whitish, with a black speck at base; some subbasal short streaks; a slightly curved medial line; a spot at end of cell; a submarginal series of specks and marginal line.

Hab. Andamans. *Exp.* 17 millim.

D. *Fore wing with a curved postmedial line, with fuscous streaks beyond it.*

1462. **Miltochrista conjunctana,** *Wlk. Cat.* xxxv, p. 1788; *C. & S.* no. 695.
Miltochrista tessellata, *Butl. Ill. Het.* v, p. 39, pl. 86, fig. 12; *C. & S.* no. 633.

Bright ochreous. Fore wing with a black spot at base; the basal part of the costa black; a doubly angulated antemedial band with its angles conjoined to an angulated medial band, which again touches a doubly curved postmedial band sending three spurs outwards towards the margin; a marginal black line.

Hab. Sikhim; Cachar; Nágas. *Exp.* 19–22 millim.

1463. **Miltochrista euprepioides,** *Wlk. Journ. Linn. Soc.* vi, p. 102.
Lyclene interserta, *Moore, P. Z. S.* 1878, p. 32, pl. 3, fig. 6; *C. & S.* no. 685.

♀. Bright ochreous; head, collar, and tegulæ marked with dark brown. Fore wing with the margins brown; a basal band; an angulated antemedial band; a doubly angulated medial band with its angles conjoined to the antemedial band, and sending a streak below the subcostal nervure and a fork below the median to a curved and angulated postmedial band, parallel to which is another band sending three streaks to the outer margin; cilia dark brown.

The Sikhim form *interserta* has the brown bands much narrower than the Bornean form.

Hab. Sikhim; Nágas; Borneo. *Exp.* 36 millim.

1464. **Miltochrista radians,** *Moore, P. Z. S.* 1878, p. 30, pl. 3, fig. 2; *C. & S.* no. 690.

♂. Differs from *prominens* in the subbasal, antemedial and medial series of fore wing being formed of short lines; the medial series nearly erect; the postmedial further from the base and almost evenly curved; the streaks on the veins of fore and hind wings shorter; the fork of the streaks on veins 8 and 9 nearer the apex.

Hab. Calcutta. *Exp.* 22 millim.

1465. **Miltochrista zebrina,** *Moore, P. Z. S* 1878, p. 31, pl. 3, fig. 4; *C. & S.* no. 693.

♀. Differs from *prominens* in the medial line of the fore wing being straighter; the postmedial line excurved round the end of cell. but not denticulate; the fork of the streaks on veins 8 and 9 as in *radians*. Hind wing with the marginal streaks somewhat diffused so as to form a fuscous band.

Hab. Calcutta. *Exp.* 24 millim.

1466. **Miltochrista coccinea**, *Moore, Jour. A. S. B.* lv, 1886, pt. 2, p. 98; *C. & S.* no. 694.

Head, thorax, and abdomen orange-red; tegulæ each with a fuscous spot. Fore wing orange; an excurved antemedial fuscous band, joined at middle to a medial band, which again joins a postmedial band below the median nervure; some short conjoined streaks beyond this band; all these markings being outlined with crimson; a series of marginal crimson spots. Hind wing pale crimson.

Hab. Margharita, Assam; Tavoy. *Exp.* 32 millim.

1467. **Miltochrista rhodina**, *Herr.-Schäffer, Samml. aussereur. Schmett.* no. 438.

Barsine trivittata, *Moore, P. Z. S.* 1877, p. 597; *C. & S.* no. 709.
Barsine exclusa, *Butl. Trans. Ent. Soc.* 1877, p. 340.

Antennæ, head, thorax, and abdomen crimson; tegulæ and thorax spotted with black. Fore wing crimson; some black marks at base; subbasal and antemedial angulated lines which are conjoined at median nervure; a spot on discocellulars; a curved postmedial line with slight streaks and fuscous suffusion beyond it; cilia black. Hind wing paler crimson.

A specimen from Burma has the medial line nearly straight, and well separated from the antemedial line; no speck at end of cell; the streaks beyond the postmedial line prominent; the costa and apex of hind wing black.

Hab. Burma; Andamans; Borneo. *Exp.* 26–28 millim.

1468. **Miltochrista cuneonotata**, *Wlk. Cat.* iii, p. 759; *Moore, Lep. Ceyl.* ii, pl. 103, fig. 10; *C. & S.* no. 696 (part.).

Ammatho roseororatus, *Butl. Trans. Ent. Soc.* 1877, p. 341.
Barsine scripta, *Wlk. Cat.* xxxi, p. 254.
Miltochrista collivolans, *Butl. A. M. N. H.* (5) viii, 1881, p. 380.

Head, thorax, and abdomen ochreous, generally suffused with crimson. Wings ochreous or suffused with crimson. Fore wing with some basal spots and subbasal fuscous streaks; a curved antemedial line anastomosing in the cell with a doubly angulated medial line; a curved and angulated postmedial line; the outer interspaces streaked with fuscous; costa and cilia fuscous.

The form *cuneonotata* is suffused with crimson; the veins of the outer area of fore wing prominently streaked with crimson; in *roseororata* the crimson streaks are less prominent, and the hind wing with hardly a trace of crimson; *scripta* is entirely ochreous.

Hab. Sikhim; Nágas; Ceylon; Sumatra; Nias; Borneo. *Exp.*, ♂ 34, ♀ 42 millim.

1469. **Miltochrista punicea**, *Moore, P. Z. S.* 1878, p. 29; *C. & S.* no. 705.

Differs from *cuneonotata* in the thorax being more strongly marked with black; abdomen black. Fore wing without the red streaks in the interspaces; the medial angulated line after coalescing

with the antemedial line touches the postmedial line in the interno-median interspace; the fuscous submarginal streaks very irregular in length. Hind wing with a series of streaks on the veins of the marginal area which coalesce into a more or less complete band; a speck at end of cell.

Hab. Sikhim; E. Pegu. *Exp.* 24 millim.

1470. **Miltochrista cruciata,** *Wlk. Journ. Linn. Soc.* vi, p. 101.
Barsine gloriosa, *Moore, P. Z. S.* 1878, p. 29, pl. 3, fig. 16; *C. & S.* no. 699.

Differs from *cuneonotata* in the fore wing having the subbasal streaks absent; the medial and postmedial lines not angulated in the interno-median interspace; the fuscous streaks in the marginal interspaces slightly developed.

Hab. Sikhim; Khásis; Sumatra; Borneo. *Exp.* 31 millim.

1471. **Miltochrista inflexa,** *Moore, P. Z. S.* 1878, p. 29, pl. 3, fig. 17; *C. & S.* no. 701.

Differs from *cuneonotata* in the thorax being spotted with crimson instead of black. Fore wing with the ground-colour bright orange, with crimson streaks between the veins; a dark patch on the junction of the antemedial and medial lines; the fuscous streaks beyond the postmedial line almost obsolete; the costa and cilia blacker. Hind wing with the cilia tinged with fuscous.

Hab. Sikhim. *Exp.* 24 millim.

1472. **Miltochrista postnigra,** n. sp.

♂. Head and thorax orange, the latter spotted with black; abdomen black. Fore wing orange, with black streaks from the base along costa, median nervure, and inner margin to an antemedial curved line, touching at middle a slightly angulated medial line; a highly excurved postmedial line, the area beyond it black with red streaks in the interspaces. Hind wing black, with a yellow fascia along the basal half of costa.

Hab. Sikhim. *Exp.* 19 millim. Type in coll. Knyvett.

E. *Fore wing with maculate bands of crimson spots.*

1473. **Miltochrista gratiosa,** *Guér. Deless. Voy. Ind.* ii, p. 90, pl. 26, fig. 1; *C. & S.* no. 700.
Lithosia striata, *Brem. & Grey, Motsch. Et. Ent.* i, p. 63.
Barsine defecta, *Wlk. Cat.* ii, p. 546; *C. & S.* no. 696.
Hypoprepia lanceolata, *Wlk. Cat.* vii, p. 1680.
Barsine mactans, *Butl. Trans. Ent. Soc.* 1877, p. 340; *C. & S.* no. 703.
Miltochrista pulchra, *Butl. A. M. N. H.* (4) xx. 1877, p. 396.
Barsine flammealis, *Moore, P. Z. S.* 1878, p. 28, pl. 3, fig. 15; *C. & S.* no. 697.
Barsine pretiosa, *Moore, P. Z. S.* 1879, p. 394; *C. & S.* no. 704.

Head, thorax, and abdomen crimson, or ochreous more or less suffused with crimson; tegulæ and vertex of thorax spotted with black. Fore wing ochreous; a black spot at base; subbasal, antemedial, and medial series of crimson spots; two crimson spots

beyond the cell; a series of long streaks in the marginal interspaces; black lines between the series of crimson spots, these lines being sometimes reduced to series of specks; the outer line produced into more or less prominent streaks between the crimson streaks. Hind wing crimson or ochreous.

The form *flammealis* = *mactans* has the ground-colour of fore wing slightly suffused with crimson; in *gratiosa* it is yellow, the first two black lines being reduced to specks; in *pretiosa* the hind wing is but slightly tinged with crimson, in *defecta* it is ochreous: in *pulchra* and *striata*, from Japan and China, the fore wing is slightly shorter and broader, the postmedial black line reduced to specks and the black streaks slightly developed; the former has the hind wing crimson, the latter ochreous. A specimen from the Khásis has the red markings of fore wing almost obsolete.

Hab. Japan; China; throughout the hills of India, Ceylon, and Burma. *Exp.*, ♂ 30–36, ♀ 40–46 millim.

1474. **Miltochrista delicia,** *Swinh. Trans. Ent. Soc.* 1891, p. 477, pl. xix, fig. 12.

♀. Differs from *gratiosa* in the crimson spots of the fore wing being smaller; a postmedial series is present separated from the marginal streaks, which are short; the lines brown; the antemedial line curved and coalescing at middle with the medial oblique line; the postmedial line more angulated; cilia fuscous.

Hab. Khásis; Nága Hills. *Exp.* 28 millim.

1475. **Miltochrista esmia,** *Swinh. A. M. N. H.* (6) xii, p. 217.

♂. Pale pink; fore wing with fuscous streaks on the veins, in cell, and interno-median interspace, and red streaks in the interspaces.

Hab. Shán States. *Exp.* 30 millim.

1476. **Miltochrista flavivenosa,** *Moore, P. Z. S.* 1878, p. 30, pl. 3, fig. 18; *C. & S.* no. 698.

♂. Differs from *gratiosa* in the fore wing having an excurved antemedial line, coalescing for a short distance with an incurved medial band; the postmedial line near the margin and much less curved, the fuscous streaks beyond it very short and only from costa to vein 4. Hind wing almost white.

Hab. Sikhim. *Exp.* 24 millim.

SECT. III. Antennæ of male bipectinated.

1477. **Miltochrista nubifascia,** *Wlk. Cat.* xxxi, p. 251; *Butl. Ill. Het.* v, pl. 86, fig. 11; *C. & S.* no. 686.
Barsine punctifascia, *Wlk. Char. undescr. Het.* p. 9.
Lyclene indistincta, *Moore, P. Z. S.* 1878, p. 33, pl. 3, fig. 9; *C. & S.* no. 684.
Lyclene simplifascia, *Elw. P. Z. S.* 1890, p. 389, pl. xxxii, fig. 19.

Head, thorax, and fore wing bright ochreous, the last with a spot at base; an antemedial series of four spots; two medial

slightly curved series of five spots; a postmedial fascia, which is sometimes almost obsolete, sometimes very broad and prominent, with its edges angulated. Abdomen and hind wing pale ochreous.

The form *simplifascia* has the two medial series of specks on fore wing straighter and further apart; *indistincta* has the markings almost obsolete.

Hab. Sikhim. *Exp.*, ♂ 34, ♀ 40 millim.

1478. **Miltochrista melanoleuca**, n. sp.

Head white; thorax white, spotted with black; abdomen white, the extremity blackish in male. Fore wing white, the basal costal area suffused with black; a subbasal series of black spots and two medial series; a broad irregular submarginal band with denticulate edges, sending a streak along inner margin towards the base. Hind wing white, with traces of medial and submarginal maculate bands.

Hab. Sikhim (*Möller*). *Exp.* 36 millim. Type in coll. Elwes.

1479. **Miltochrista trimacula**, *Hmpsn. Ill. Het.* ix, p. 85, pl. 157, figs. 27, 28.

♂. Fuscous brown; head, collar, and base of patagia orange. Fore wing with black spots at base, middle, and end of cell; traces of a curved postmedial line.

♀. Thorax and ground-colour of fore wing yellow; the postmedial line slightly more distinct; anal tuft greyish.

Hab. Ceylon. *Exp.*, ♂ 18, ♀ 20 millim.

Genus **TRICHOLEPIS**.

Tricholepis, *Hmpsn. Ill. Het.* viii, p. 44 (1891).

Type, *T. erubescens*, Hmpsn.

Range. Nilgiris; Ceylon.

Palpi very minute. Antennæ ciliated in both sexes, the cilia longer in male than female. Abdomen of female with a large anal tuft. Wings covered with hair-like scales; fore wing long, the apex produced and rounded; the outer margin very oblique; veins 7, 8, 9 stalked; 11 anastomosing with 12. Hind wing with vein 3 from before angle of cell; 5 from above angle; 6 and 7 stalked; 8 from beyond middle of cell.

Sect. I. Hind tibiæ with a terminal pair of spurs.

1480. **Tricholepis erubescens**, *Hmpsn. Ill. Het.* viii, p. 44, pl. 139, figs. 3, 12.

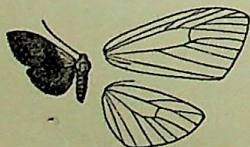



Fig. 74.—*Tricholepis erubescens*, ♂. ½.

♂. Head and thorax scarlet; abdomen and wings black. Fore wing with the basal area scarlet, extending along the costa to the middle; disk slightly suffused with scarlet.

♀. The anal tuft ochreous; fore wing much more suffused with scarlet; the cilia scarlet.

Larva thickly clothed with short brown hair.
Hab. Nilgiri plateau. *Exp.* 20 millim.

SECT. II. Hind tibiæ with two pairs of spurs.

1481. **Tricholepis uniformis,** *Hmpsn. Ill. Het.* ix, p. 86, pl. 157, fig. 29.

♀. Pale brownish fuscous; the vertex of head yellowish; anal tuft ochreous. Wings semihyaline; fore wing with a yellowish tinge.
Hab. Newera Ellia, Ceylon. *Exp.* 24 millim.

Genus MACHÆROPHORA.

Machairophora, *Hmpsn. Ill. Het.* ix, p. 86 (1893).

Type, *M. fulvipuncta*, Hmpsn.
Range. Ceylon.
♂. Antennæ bipectinate, the branches very short. Fore tibia with a short curved spine; mid and hind tibiæ with rather long terminal pairs of spurs. Wings covered with scales and hair. Fore wing with veins 7, 8, 9 stalked; 11 arising from 10, then anastomosing with 12. Hind wing with veins 3 and 4 stalked; 6 and 7 on a very long stalk; 8 from near end of cell.

1482. **Machærophora fulvipuncta,** *Hmpsn. Ill. Het.* ix, p. 86, pl. 159, fig. 10.

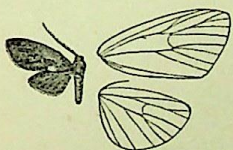



Fig. 75.—*Machærophora fulvipuncta*, ♂. ½.

♂. Head, collar, and tegulæ orange-yellow; thorax dark brown, with a few orange scales. Abdomen and wings very dark brown; fore wing with a dusky yellow patch at centre of inner margin.
The female, Mr. E. E. Green informs me, is apterous.
Hab. Maskelyia, Ceylon. *Exp.* 20 millim.

Genus XANTHOCRASPEDA, nov.

Type, *X. marginata*, Wlk.
Range. S. India.
Palpi minute and porrect. Antennæ of male with long cilia. Tibiæ with the spurs of moderate length. Fore wing with vein 3 from before angle of cell; 4 and 5 from angle; 6 from upper angle; 7, 8, 9 stalked; 11 anastomosing with 12. Hind wing with vein 3 from before angle of cell, 5 from above the angle; 6 and 7 stalked; 8 from near end of cell.

1483. **Xanthocraspeda marginata**, *Wlk. Cat.* xxxi, p. 274; *C. & S.* no. 721.

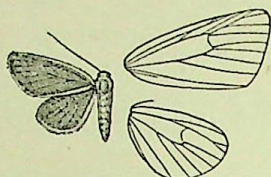



Fig. 76.—*Xanthocraspeda marginata*, ♂. 1/1.

♂. Head, thorax, and abdomen bright yellow. Wings dark reddish brown; fore wing with the central portion of costa and basal three-fourths of inner margin yellow. Hind wing with the inner margin and cilia towards anal angle yellow.

Hab. Coimbatore. *Exp.* 22 millim.

Genus THUMATHA.

Thumatha, *Wlk. Cat.* xxxv, p. 1900 (1866).

Type, *T. fuscescens*, Wlk.

Range. Ceylon; Australia.

Palpi porrect and slender. Antennæ bipectinated in male. Tibiæ with the spurs long. Fore wing short and broad; veins 3, 4, 5 from close to end of cell; 6 from below upper angle; 7, 8, 9 stalked; 11 anastomosing with 12. Hind wing with veins 3 and 4 stalked; 5 from angle of cell; 6 and 7 stalked; 8 from beyond the middle of cell.

1484. **Thumatha fuscescens**, *Wlk. Cat.* xxxv, p. 1901; *Hmpsn. Ill. Het.* ix. pl. 158, fig. 18.

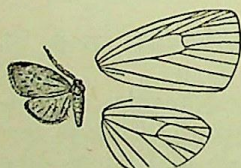



Fig. 77.—*Thumatha fuscescens*, ♂. 1/1.

♂. Pale reddish brown. Fore wing with traces of ante- and postmedial waved lines; a black spot at end of cell; a spot on the costa before the apex; series of submarginal and marginal specks.

Hab. Ceylon; Moreton Bay, Australia. *Exp.* 16 millim.

Genus NUDARIA.

Nudaria, *Haw. Lep. Brit.* p. 156 (1803).
Rhanghana, *Moore, P. Z. S.* 1878, p. 22.

Type, *N. mundana*, Linn., from Europe.

Range. Europe; Africa; throughout India; Burma; Australia.

Palpi minute and porrect. Antennæ with the basal joint swollen and large. Tibiæ with the spurs rather short. Fore wing with the cell long; veins 9 and 11 present; vein 5, when present, often comes from the middle of discocellulars in male, but is curved, not straight as in the *Geometridæ*. Hind wing with vein 3 from before angle of cell, 5 from above angle; 6 and 7 on a long stalk; 8 from near end of cell.

SECT. I. Fore wing with vein 5 absent; 6 from below angle of cell.

A. *Fore wing with veins 7, 8, 9 stalked; antennæ of male with the cilia minute.*

1485. **Nudaria apicalis,** *Wlk. Cat.* ii, p. 521.

♂. Fulvous yellow. Fore wing with a black speck at base of costa; a subbasal black spot; another at end of cell. Hind wing paler.

In the type from China the anal tuft is black.

Hab. China; Burma. *Exp.* 20 millim.

B. *Fore wing with veins 7, 8, 9 from angle of cell; antennæ of male with the cilia long.*

1486. **Nudaria suffusa,** n. sp.

♂. Ochreous white; the wings suffused with fuscous. Fore wing with whitish patches at centre of costa, apex, centre of outer margin, and outer angle. Hind wing with the cilia pale.

Hab. Sikhim. *Exp.* 18 millim. Type in coll. Elwes.

SECT. II. Fore wing with vein 5 present; 6 absent; 7, 8, 9 stalked.

1487. **Nudaria fasciata,** *Moore, P. Z. S.* 1878, p. 36; *C. & S.* no. 722.

♂. Pale ochreous. Fore wing with the costal area suffused with dark red-brown; postmedial and apical striæ on the costa; traces of a postmedial oblique fuscous line; a marginal series of specks.

Hab. Sikhim, 10,000 feet. *Exp.* 25 millim.

1488. **Nudaria margaritacea,** *Wlk. Cat.* xxxi, p. 275; *C. & S.* no. 724.

Nudaria margaritaria, *Wlk. Cat.* xxxi, p. 275; *C. & S.* no. 725.

White. Fore wing with the basal part of the costa black; a basal speck; antemedial, postmedial, and submarginal angulated

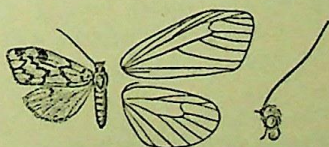



Fig. 78.—*Nudaria margaritacea,* ♂. 1/1.

fuscous lines, the last sending a spur to centre of outer margin. Hind wing with an indistinct fuscous spot on centre of costa.

Hab. Sikhim. *Exp.* 25 millim.

1489. **Nudaria coavestis**, n. sp.

♂. Head, thorax, and abdomen pale ochreous. Fore wing pale semidiaphanous ochreous, with a straight antemedial hyaline band; a hyaline ring-spot at end of cell and curved postmedial band. Hind wing whitish hyaline.

Hab. Sikhim (*Elwes*). *Exp.* 20 millim. Type in coll. Elwes.

SECT. III. (*Rhanghana*). Fore wing with vein 5 absent; 6 stalked with 7, 8, 9.

*1490. **Nudaria punctata**, *Moore, P. Z. S.* 1878, p. 22, pl. 2, fig. 12; *C. & S.* no. 606.

♀. Pale ochreous buff. Fore wing with nine small black marginal spots; underside paler.

Hab. Calcutta. *Exp.* 30 millim.

Genus PALÆOPSIS.

Palæopsis, *Hmpsn. Ill. Het.* ix, p. 86 (1893).

Type, *P. diaphanella*, Hmpsn.

Range. Nága Hills; Ceylon.

Palpi short and porrect, the first two joints fringed with long hairs. Antennæ with the basal joint swollen and fringed with long scales; the medial spurs of hind tibiæ very short. Fore wing with the cell nearly reaching the apex; vein 5 from near centre of discocellulars; 6, 9, and 11 absent. Hind wing with vein 3 from before angle of cell; 5 from above the angle; 6 and 7 stalked, 8 from near end of cell.

1491. **Palæopsis diaphanella**, *Hmpsn. Ill. Het.* ix, p. 87, pl. 158, fig. 8.

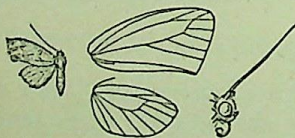



Fig. 79.—*Palæopsis diaphanella*, ♂. 1/1.

♂. White; the wings semidiaphanous. Fore wing with subbasal and antemedial brown spots on the costa; a postmedial spot from which runs a waved line to inner margin; an indistinct patch beyond the cell and three large submarginal spots.

Hab. Nága Hills; Ceylon. *Exp.* 14 millim.

Genus SCHISTOPHLEPS.

Schistophleps, *Hmpsn. Ill. Het.* viii. p. 53 (1891).

Type, *S. bipuncta*, Hmpsn.

Range. Nága Hills; Nilgiris; Ceylon.

Palpi slight and porrect. Antennæ with the basal joint swollen

and clothed with long scales. Tibiæ with the spurs rather short. Fore wing with vein 3 from before angle of cell; 5 from near centre of discocellulars; 6 from upper angle; 7, 8 and 9, 10 stalked; 11 anastomosing with 12; 3 veinlets between 12 and the costa. Hind wing with vein 3 from before angle of cell; 5 from above angle; 6 and 7 stalked; 8 from near end of cell.

1492. **Schistophleps bipuncta,** *Hmpsn. Ill. Het.* viii, p. 54, pl. 140, fig. 23.

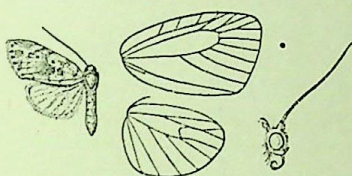



Fig. 80.
Schistophleps bipuncta, ♂. 1/1.

Ochreous semidiaphanous white. Fore wing with an indistinct antemedial rufous line, with some fuscous suffusion on its inner edge; black specks at centre and end of cell; the postmedial discal area suffused with rufous; a series of indistinct submarginal streaks and marginal specks. Hind wing hyaline.

Hab. Nága Hills; Nilgiris; Ceylon. *Exp.* 21 millim.

Genus **CHAMAITA**.

Chamaita, *Wlk. Journ. Linn. Soc.* vi, p. 121 (1862).
Homopsyche, *Butl. A. M. N. H.* (5) x, p. 226 (1882).

Type, *C. trichopteroides*, Wlk., from Borneo.

Range. Nága Hills; Assam; Ceylon; Borneo; New Britain.

Palpi slight and porrect. Antennæ with the basal joint thickened and very long. Tibiæ with the spurs rather short. Fore wing with the costa hairy and highly arched; in *C. trichopteroides* the cell in the male is covered by a fringe of hair arising from the subcostal nervure; of the Indian species the males are unknown; vein 3 from before angle of cell; 5 from near centre of discocellulars; 6 from below upper angle; 7 and 8 stalked; 9 absent; 11 not anastomosing with 12. Hind wing with vein 3 from before angle of cell; 5 from above angle; 6 and 7 stalked; 8 from middle of cell.

SECT. I. Fore wing with vein 10 absent.

1493. **Chamaita neuropteroides,** n. sp.

♀. Head and thorax white, with a fulvous tinge; abdomen white. Wings semidiaphanous white; fore wing with indistinct antemedial and medial waved fulvous lines, and submarginal and marginal series of specks.

Hab. Margharita, Assam; Nágas (*Doherty*). *Exp.* 20 millim. Type in coll. Elwes.

SECT. II. Fore wing with vein 10 present.

1494. **Chamaita nympha**, *Moore, Lep. Ceyl.* iii. p. 536, pl. 211, fig. 11.

♀. Differs from *neuropteroides* in having a fulvous spot at centre of cell of fore wing.

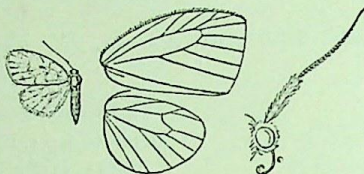



Fig. 81.—*Chamaita nympha*, ♀. 1/1.

Hab. Ceylon. *Exp.* 18 millim.

Genus CACYPARIS.

Cacyparis, *Wlk. Cat.* xxvi, p. 1572 (1862).
Ballatha, *Wlk. Cat.* xxxiv, p. 1214 (1865).

Type, *C. insolitata*, Wlk.
Range. Throughout India, Burma, and Ceylon; Solomons.
Palpi upturned, the 3rd joint very long, slender, and knobbed at the end. Antennæ fasciculate in male. Fore wing broad, the apex acute; veins 3, 4, 5 from near angle of cell; 6 from upper angle; 9 arising from 10 and anastomosing with 8 to form the areole. Hind wing with veins 3 and 4 from angle of cell; 5 from above the angle; 6 and 7 from upper angle; 8 from before middle of cell.

1495. **Cacyparis insolitata**, *Wlk. Cat.* xxvi, p. 1572; *Moore, Lep. Ceyl.* iii. pl. 198, figs. 5, 5 *a*; *C. & S.* no. 3547.
Ballatha atrotumens, *Wlk. Cat.* xxxiv, p. 1215.

Head and thorax purplish grey. Fore wing purplish grey, the basal area suffused with silver scales and bounded by an ill-defined silvery band; a silver band on discocellulars; a postmedial curved silver band with a spot of raised shining black scales on the inner margin just within it; an oval black subapical spot ringed with ochreous and bisected by an ochreous line, with an oblique silver line from the costa to its inner edge; cilia silvery. Hind wing ochreous, suffused with fuscous, except the costal area. Abdomen yellow, suffused with fuscous.

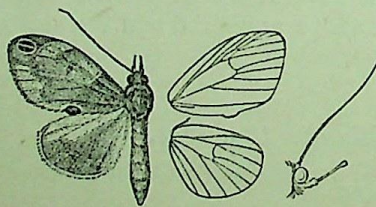



Fig. 82.
Cacyparis insolitata, ♂. 1/1.

Hab. Nilgiris; Ceylon. *Exp.*, ♂ 32, ♀ 36 millim.

1496. **Cacyparis læta,** *Wlk. Cat.* xxxiv, p. 1215; *C. & S.* no. 3548.

Head, thorax, and abdomen pale red-brown. Fore wing grey, suffused with red-brown, except at apex; two dark specks in end of cell; traces near inner margin of dark medial, postmedial, and submarginal lines. Hind wing bright yellow. Underside bright yellow; the whole fore wing suffused with smoky black, except the apex and a streak from the base to centre of costa.

Hab. Moulmein. *Exp.* 24 millim.

1497. **Cacyparis prunifera,** *Swinh. MS.*

♀. Head and thorax mottled dark and pale brown. Tegulæ with tufts of long white hairs and scales arising from beneath them. Thorax with the ground-colour white, closely striated all over with dark purplish brown; a broken lunulate antemedial chocolate band; a large oval chocolate mark beyond the cell, with a pale outer edge, some orange marks on its inner edge, and plum-coloured dashes forming its centre; some purplish marks on the outer margin. Abdomen and hind wing fuscous.

Hab. Sikhim; Ceylon. *Exp.* 40 millim. Type in Mus. Oxon.

Genus **CHANDICA.**

Chandica, *Moore, Lep. Atk.* p. 286 (1888).

Type, *C. quadripennis*, Moore.

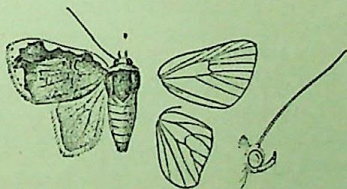
Range. Sikhim; Borneo.

Palpi upturned, reaching vertex of head, the 3rd joint short. Antennæ minutely ciliated in male. Fore wing very broad; veins 3, 4, 5 from close to angle of cell; 6 from below upper angle; 7 and 8 stalked. Hind wing subquadrate; the outer margin slightly excised; veins 3, 4, 5 stalked and much curved; 6 and 7 from upper angle; 8 from middle of cell.

1498. **Chandica quadripennis,** *Moore, Lep. Atk.* p. 286.

♂. Head, collar, and legs canary-yellow, slightly marked with red-brown; thorax ferruginous red, suffused with brown. Fore wing ferruginous red, crossed by indistinct nearly straight antemedial, and curved and dentate postmedial lines, the latter with a diffused dark streak on its upper portion; the costa and outer margin with irregular canary-yellow bands, with some brown suffusion on their inner edges; some brown specks on outer margin below the apex. Abdomen and hind wing whitish, slightly suffused with pink and fuscous.

Fig. 83.
Chandica quadripennis, ♂. 1/1.

Hab. Sikhim; Borneo. *Exp.* 30 millim.

Subfamily NYCTEOLINÆ.

A group of *Arctiidæ*, many of them coloured green, frequenting trees and shrubs. The apex of the fore wing is more or less produced to a point *.

Larva. Eight pairs of legs: fleshy, with the anal somite tapering to a point. *Halias* is smooth, the anal prolegs long, and feeds in the open; *Earias* is sparsely covered with hair, has the anal claspers short, and feeds among rolled-up leaves.

Key to the Genera.

a. Fore wing with an areole.
  a'. Fore wing with vein 10 anastomosing with 7, 8, 9 to form the areole ...... 1. SINNA, p. 128.
  b'. Fore wing with vein 9 anastomosing with 8 to form the areole .... 6. PARACRAMA, p. 134.
b. Fore wing with no areole.
  a'. Fore wing with veins 7, 8, 9, 10 stalked.
    a^2. Hind wing with vein 5 absent...... 3. TYANA, p. 130.
    b^2. Hind wing with vein 5 present .... 4. HALIAS, p. 132.
  b'. Fore wing with veins 7, 8, 9 stalked; 10 from cell.
    a^2. Palpi upturned .... 5. EARIAS, p. 132.
    b^2. Palpi porrect and very long .... 9. TOPADESA, p. 137
  c'. Fore wing with veins 8, 9, 10 stalked, 7 from cell.
    a^2. Palpi with the 3rd joint naked.
      a^3. Hind wing with the outer margin rounded .... 2. ARIOLICA, p. 129.
      b^3. Hind wing with the outer margin angled .... 7. SIGLOPHORA, p. 135.
    b^2. Palpi with the 3rd joint fringed with scales on the inside .... 8. GABALA, p. 136.

Genus SINNA.

Sinna, *Wlk. Cat.* xxxii, p. 641 (1865).
Teinopyga, *Feld. Reis. Nov.* p. 9, pl. 106, fig. 18 (1875).

Type, *S. calospila*, Wlk., from Java.

Range. Japan; China; Assam; Java; Sumatra.

Palpi porrectly upturned, the 3rd joint slender and long. Antennæ simple. Tibiæ with the spurs long. Fore wing with the apex subquadrate; veins 3, 4, 5 from near lower angle of cell; 6 from upper angle; 7 forming a small areole with 8, which gives off 9 and 10. Hind wing with veins 3 and 4 from lower angle of cell; 5 from above angle; 6 and 7 from upper angle; 8 from before middle of cell.

* The *Nycteolinæ* approach the *Acontiinæ* in the structure of vein 8 of the hind wing in some forms, but their tree-frequenting habits are very different.

1499. **Sinna dohertyi,** *Elw. P. Z. S.* 1890, p. 400, pl. 33, fig. 5.

♂. Head, thorax, and abdomen white; palpi orange, tipped with black; collar, tegulæ, and metathorax marked with orange. Fore wing white; the basal two-thirds with reticulated dark crimson

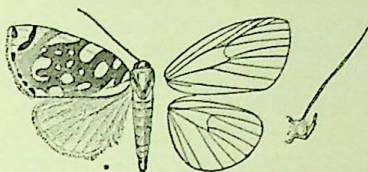



Fig. 84.—*Sinna dohertyi,* ♂. 1/1.

markings; a yellow streak on middle of inner margin; an obliquely curved postmedial orange band ending at outer angle; an oblique black subapical streak and series of black marginal spots. Hind wing white.

♀. The streak on inner margin of fore wing crimson; the subapical streak divided into two spots; palpi white, thorax marked with crimson.

Hab. Nága Hills; Margharita, Assam. *Exp.*, ♂ 37, ♀ 42 millim.

Genus ARIOLICA.

Ariolica, *Wlk. Journ. Linn. Soc.* vii, p. 53 (1864).
Chionomera, *Butl. Trans. Ent. Soc.* 1881, p. 18.

Type, *A. lineolata*, Wlk., from Borneo.

Range. Japan; Sikhim; Khásis; Burma; Borneo.

Palpi upturned, the 2nd joint reaching vertex of head; the 3rd joint long. Antennæ simple. Tibiæ with the spurs long. Fore wing with the apex rounded; veins 3, 4, 5 from close to lower angle of cell; 6 and 7 from the upper angle; 8, 9, 10 stalked. Hind wing with veins 3 and 4 stalked or from cell; 5 from middle of discocellulars; 6 and 7 stalked; 8 from before middle of cell.

*1500. **Ariolica triangulifera,** *Moore, Lep. Atk.* p. 285.

Head yellow; thorax and abdomen white. Fore wing bright yellow, with a white patch at base edged by a reddish streak; a white spot below centre of costa; the whole outer area, except the costa, reddish purple, with a series of white submarginal spots, the spot at middle large and triangular.

Hab. Cherra Punji. *Exp.* 22 millim.

1501. **Ariolica superba,** *Moore, P. Z. S.* 1867, p. 668, pl. 33, fig. 15; *C. & S.* no. 510.

♂. Head orange or white; thorax and abdomen white. Fore wing silvery white; a black spot on costa at base, the costa black in some specimens; an orange fascia below it; an antemedial slightly waved orange band with some black scales on its outer edge; an oblique waved band from costa beyond the middle to

outer angle, wide at costa and outer angle and bearing a white spot below the costa; a triangular orange mark on middle of outer margin; cilia dark at apex. Hind wing white.

Hab. Sikhim. *Exp.* 32 millim.

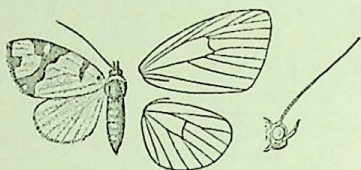



Fig. 85.—*Ariolica superba*, ♂. 1/1.

1502. **Ariolica pulchella**, *Elwes, P. Z. S.* 1890, p. 387, pl. 32, fig. 15.

Differs from *superba* in the markings of the fore wing being olive-yellow; no black basal spot on the costa; the antemedial band much broader, as also is the oblique band, the subapical patch being much reduced.

Hab. Sikhim; E. Pegu. *Exp.* 26–30 millim.

Genus TYANA.

Tyana, *Wlk. Cat.* xxxv, p. 1776 (1866).

Type, *T. callichlora*, Wlk.

Range. Nepal; Sikhim; Bhutan.

Palpi porrect and slender. Antennæ minutely ciliated. Fore wing with the apex produced and acute; veins 3, 4, 5 from near angle of cell; 6 from upper angle; 7, 8, 9, 10 stalked. Hind wing with the apex acute; veins 3 and 4 from angle of cell; 5 absent; 6 and 7 from upper angle; 8 from middle of cell.

SECT. I. Hind wing of male with a fold on the inner margin containing flocculent masses of hair.

1503. **Tyana callichlora**, *Wlk. Cat.* xxxv, p. 1776; *Butl. Ill. Het.* vi, pl. 105, figs. 2, 3; *C. & S.* no. 504.

♂. Head pale red-brown, the frons and vertex white; palpi with a yellow ring; collar and tegulæ white; thorax green, fringed

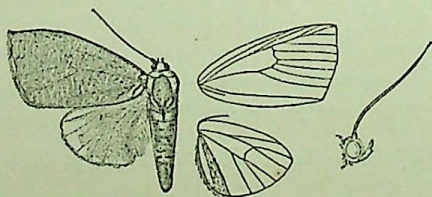



Fig. 86.—*Tyana callichlora*, ♂. 1/1.

with red-brown scales; a pair of white spots on metathorax. Fore wing green, with slight yellowish striæ; a white spot outlined with red-brown at base; costa pale; a red-brown spot at origin of

vein 2; outer margin with a series of small white specks on a narrow red-brown band. Abdomen and hind wing whitish, with a yellowish-fuscous tinge.

♀. Fore wing with the yellowish striæ much more prominent; an antemedial red-brown spot on the costa variable in size or sometimes absent; the spot at origin of vein 2 larger; a broad marginal red-brown band, widest at middle and outer angle. Abdomen and hind wing pure white.

Hab. Sikhim. *Exp.*, ♂ 40, ♀ 36 millim.

1504. **Tyana pustulifera,** *Wlk. Cat.* xxxv, p. 1773; *Butl. Ill. Het.* vi, pl. 105, fig. 7; *C. & S.* no. 508.
Tyana flatoides, *Moore, Lep. Atk.* p. 285.

Differs from *callichlora* in the vertex of head, collar, and tegulæ being yellow with red markings; metathorax without white specks. Fore wing more acute at apex; uniform green, without yellow striæ or red and white markings, except a white spot at base outlined with red and the costa pale; cilia yellow.

♀ with a yellow red-ringed spot at end of cell of fore wing variable in size and sometimes with a brown dot below it.

The form *flatoides* has a large red-brown patch on the fore wing from lower angle of cell to inner margin, some specimens having a white spot at its apex.

Hab. Nepal. *Exp.*, ♂ 44, ♀ 38–46 millim.

SECT. II. Hind wing of male without the fold and gland on inner margin.

1505. **Tyana chloroleuca,** *Wlk. Cat.* xxxv, p. 1777; *Butl. Ill. Het.* vi, pl. 105, figs. 5, 6; *C. & S.* no. 505.
Tyana speculatrix, *Butl. A. M. N. H.* (5) vi, 1880, p. 64; *C. & S.* no. 509.
Tyana lancina, *Butl. A. M. N. H.* (5) vi, 1880, p. 65; *C. & S.* no. 507.

Differs from *pustulifera* in the head, collar, and tegulæ being yellow. Fore wing with the basal patch yellow, only slightly outlined with red. Abdomen and hind wing pure white in both sexes.

The form *speculatrix* has a large red-brown patch at lower angle of cell with two or three ochreous spots on it; in *chloroleuca* these are reduced to two red-brown specks, in *lancina* they are completely absent.

Hab. Sikhim; Bhutan. *Exp.*, ♂ 36, ♀ 38 millim.

1506. **Tyana falcata,** *Wlk. Cat.* xxxv, p. 1772; *Butl. Ill. Het.* vi, pl. 105, fig. 9; *C. & S.* no. 506.

♀. Differs from *chloroleuca* in the head, collar, and tegulæ being green. Fore wing uniform green, with two red-brown specks at angles of cell; costa darker; cilia slightly yellowish.

Hab. Sikhim. *Exp.* 34 millim.

Genus HALIAS.

Halias, *Treitschke, Schmett. Eur.* vii, p. 227 (1829).
Hylophila, *Hübn. Verz.* p. 396 (1818), non descr.
Cloëphora, *Steph. Syst. Cat. Brit. Ins.* pt. 2, p. 168 (1829).

Type, *H. prasinana*, Linn., from Europe.
Range. Europe; Japan; Nága Hills.
Palpi upturned, slender, and reaching above vertex of head. Antennæ minutely ciliated. Tibiæ with the spurs long. Fore wing with the apex acute; veins 3, 4, 5 from close to angle of cell; 6 from upper angle; 7, 8, 9, 10 stalked. Hind wing with veins 3 and 4 on a short stalk, 5 from lower angle of cell, 6 and 7 from upper angle, 8 from before middle of cell.

1507. **Halias orientalis,** n. sp.

♀. Head, thorax, and fore wing very pale green, the last with

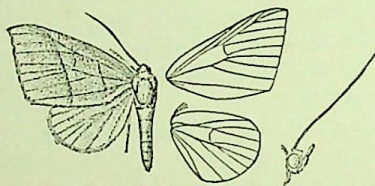



Fig. 87.—*Halias orientalis*, ♀. 1/1.

the costa yellowish; ante- and postmedial oblique yellow lines; cilia yellow. Abdomen and hind wing white.
Hab. Nága Hills, 6000 feet (*Doherty*). *Exp.* 36 millim. Type in coll. Elwes.

Genus EARIAS.

Earias, *Hübn. Verz.* p. 395 (1818).
Aphusia, *Wlk. Cat.* xii, p. 769 (1857).
Digba, *Wlk. Journ. Linn. Soc.* vi, p. 198 (1862).

Type, *E. clorana*, Linn., from Europe.
Range. Europe; Africa; Mauritius; Japan; China; throughout India, Burma, and Ceylon; Siam; Java; Australia.
Palpi upturned, the 2nd joint reaching vertex of head, the 3rd porrect and varying in length. Antennæ minutely ciliated in male. Fore wing with veins 3, 4, 5 from near angle of cell, 6 from upper angle, 7, 8, 9 stalked. Hind wing with veins 3 and 4 stalked, 5 absent, 6 and 7 from upper angle, 8 from centre of cell.

1508. **Earias insulana**, *Boisd. Faun. Madag.* p. 121, pl. 16, fig. 9; *C. & S.* no. 500.
Earias tristrigosa, *Butl. P. Z. S.* 1881, p. 614; *C. & S.* no. 503.
Earias smaragdinana, *Zell. Lep. Caffr., K. Vet.-Akad. Handl.* 1852, p. 79.
Earias frondosana, *Wlk. Cat.* xxvii, p. 204.
Earias simillima, *Wlk. Cat.* xxxv, p. 1775.
Earias siliquana, *Staint. Trans. Ent. Soc.* (3) v, 1867, p. lxxxix.
Earias gossypii, *Frauenfeld, Verh. zool.-bot. Ges. Wien*, 1867, p. 791.
Earias biplaga, *Wlk. Cat.* xxxv, p. 1773.

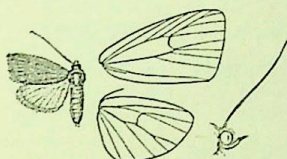



Fig. 88.
Earias insulana, ♂. 1/1.

Head, thorax, and fore wing pea-green, the last with three angled indistinct lines—medial, postmedial, and submarginal. Hind wing semi-diaphanous white; the outer margin slightly fuscous below the apex.

Some African specimens have the area between the first two lines of the fore wing filled in with fuscous brown towards inner margin.

Hab. Throughout Africa; Mauritius; Baluchistan; N. and S. India; Burma; Siam. *Exp.* 22 millim.

1509. **Earias fabia**, *Stoll, Cram. Pap. Exot.* iv, pl. 355, fig. H.
Aphusia speiplena, *Wlk. Cat.* xii, p. 770; *C. & S.* no. 502.
Earias hügeli, *Rogenh. Verh. zool.-bot. Ges. Wien*, 1870, p. 872; *C. & S.* no. 501.
Micra partita, *Wlk. Cat.* xxxiii, p. 799.

Differs from *insulana* in the head and thorax being ochreous white; fore wing without lines, but with broad white bands along costa and inner margin, leaving only the middle third green.

Hab. Punjab; Calcutta; Ganjam; S. India; Ceylon; Java. *Exp.* 32 millim.

1510. **Earias chromataria**, *Wlk. Cat.* xxvii, p. 204; *C. & S.* no. 499.
Earias limbana, *Snell. Tijds. Ent.* xxii, 1879, p. 97, pl. 8, fig. 2.
Earias fervida, *Wlk. Cat.* xxxv, p. 1774.
Earias fulvidana, *Wallengr. Wien. ent. Mon.* 1863, p. 143.

Head and thorax pale green; palpi pinkish. Fore wing pale green; the basal part of the costa suffused with pinkish yellow; two red-brown specks towards end of cell; an irregular brown marginal band with yellow on its inner edge. Abdomen and hind wing white.

Hab. Throughout Africa, India, and Ceylon; Japan; Java. *Exp.* 20 millim.

1511. **Earias uninotata,** *Wlk. Journ. Linn. Soc.* vi, p. 198.
Earias annulifera, *Wlk. Cat.* xxxv, p. 1774; *Hmpsn. Ill. Het.* ix, pl. 157, fig. 18.
Earias sulphuraria, *Moore, Lep. Ceyl.* iii, p. 490, pl. 208, fig. 10.

Head, thorax, and fore wing bright canary-yellow; very indistinct ante- and postmedial greenish lines; the outer margin tinged with green; a brown annulus on the discocellulars. Hind wing semidiaphanous white: the apex suffused with yellow.

In the variety *sulphuraria* the markings of the fore wing are almost entirely obsolete.

Hab. Nilgiris; Ceylon; Sumatra; Java. *Exp.* 20-24 millim.

1512. **Earias luteolaria,** *Hmpsn. Ill. Het.* viii, p. 46, pl. 139, fig. 16.

♀. Differs from *uninotata*, var. *sulphuraria*, in the outer margin of the fore wing being narrowly red-brown; the cilia purplish.

Hab. Nágas; Nilgiris; Ceylon. *Exp.* 26 millim.

Genus **PARACRAMA.**

Paracrama, *Moore, Lep. Ceyl.* iii, p. 54 (1884).

Type, *P. dulcissima*, Wlk.

Range. Nilgiris; Ceylon; Nága Hills; Andamans; Borneo.

Palpi upturned, the 2nd and 3rd joints very long. Antennæ minutely ciliated. Fore wing with veins 3, 4, 5 from near angle of cell; 6 from upper angle; 9 rising from 10 and anastomosing with 8 to form the areole. Hind wing with veins 3 and 4 from angle of cell; 5 from above the angle; 6 and 7 from upper angle; 8 from before centre of cell.

1513. **Paracrama dulcissima,** *Wlk. Journ. Linn. Soc.* vii, p. 76; *Moore, Lep. Ceyl.* iii, pl. 150, fig. 11; *C. & S.* no. 1912.
Paracrama rectomarginata, *Hmpsn. Ill. Het.* viii, p. 46, pl. 139, fig. 7.

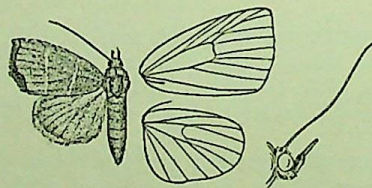



Fig. 89.—*Paracrama dulcissima*, ♂. 1/1.

Palpi and legs pink and brown, their inner surfaces white. Antennæ brown; head and thorax pea-green; abdomen white, suffused with pink. Fore wing pea-green; pale oblique ante- and postmedial lines, the latter angled below the costa; a pink patch

on inner margin near the base; costa pinkish purple; a marginal pinkish-purple band, narrowest at middle. Hind wing whitish, suffused with pink towards outer margin.

The form *rectomarginata* has the marginal purplish border of the fore wing narrow, expanding into a patch at the apex.

Hab. Nágas; Nilgiris; Ceylon; Andamans; Borneo. *Exp.*, ♂ 25, ♀ 28–34 millim.

1514. **Paracrama saturata,** *Wlk. Cat.* xxxiii, p. 774; *C. & S.* no. 1790.

Paracrama olivacea, *Hmpsn. Ill. Het.* ix, p. 87, pl. 157, fig. 17.

Head pale red; thorax olive or bright glaucous green; abdomen fuscous, suffused with red towards extremity. Fore wing olive or bright glaucous green, the costa pale red; subbasal and post-medial pale waved lines, with darker green beyond the former and before the latter; a series of marginal black specks; cilia tipped with red. Hind wing smoky black; a dark red patch on middle of outer margin; cilia of apical half of wing red.

Hab. Ceylon. *Exp.* 24 millim.

Genus SIGLOPHORA.

Siglophora, *Butl. P. Z. S.* 1892, p. 123.

Type, *S. bella*, Butl.

Range. Sikhim; Borneo.

Palpi upturned, the 2nd joint reaching vertex of head, the 3rd short and porrect. Antennæ minutely ciliated in male. Fore wing with veins 3, 4, 5 from near angle of cell, 6 and 7 from upper angle, 8, 9, 10 stalked. Hind wing with the outer margin angled at vein 3; veins 3 and 4 stalked, 5 from angle of cell, 6 and 7 from upper angle, 8 from centre of cell.

1515. **Siglophora sanguinolenta,** *Moore, Lep. Atk.* p. 285.

♂. Head and thorax canary-yellow, spotted with red; abdomen ochreous, with reddish bands. Fore wing canary-yellow, spotted

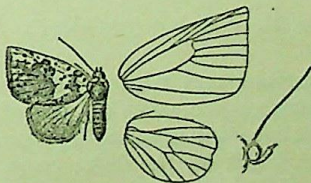



Fig. 90.—*Siglophora sanguinolenta*, ♂. ½.

with red; a purplish-brown subbasal band with waved red edges; a large purplish red-brown blotch occupying the whole outer half

of the wing except the costa. Hind wing with the basal half white; the outer fuscous; cilia pinkish. Underside white, with a fuscous blotch on outer area of fore wing.

Hab. Sikhim. *Exp.* 26 millim.

Genus **GABALA**.

Gabala, *Wlk. Cat.* xxxiv, p. 1220 (1865).

Type, *G. polyspilalis*, Wlk.

Range. Japan, Sikhim, and throughout the Western Ghats and Malabar coast.

Palpi upturned, the 1st joint very long and fringed with scales on its inner side, the 3rd short and fringed on both sides. Antennæ minutely ciliated. The first segment of abdomen with paired corneous belt-like processes on the underside, each with a tuft of scales. Fore wing with the apex acute; outer margin angled at vein 5; vein 6 from below angle of cell; 7 from the angle; 8, 9, 10 stalked. Hind wing with the outer margin angled at vein 2; anal angle truncate; a large tuft of hair on inner margin; median nervure and vein 2 fringed with long hair; veins 3 and 4 stalked; 5 from above angle; 6 and 7 from upper angle of cell; 8 from centre of cell.

1516. **Gabala polyspilalis**, *Wlk. Cat.* xxxiv, p. 1221; *C. & S.* no. 2948.

Head and thorax ochreous, tesselated with silvery-white spots, outlined in red-brown; abdomen ochreous, with a slight dorsal red-brown streak on first two segments. Fore wing red-brown;

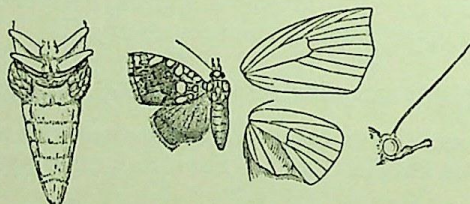



Fig. 91.—*Gabala polyspilalis*, ♂. ½.

some tesselated ochreous and white spots on basal area and at apex and outer margin; the veins at end of cell pale; a black postmedial streak above inner margin; some pale postmedial lunules centred with black on the disk; costa towards apex and cilia bright yellow. Hind wing ochreous, sometimes suffused with fuscous; a marginal red line and the cilia red from apex to vein 2.

Hab. Sikhim and throughout the Western Ghats and Malabar coast. *Exp.* 24 millim.

Genus TOPADESA.

Topadesa, *Moore, Lep. Atk.* p. 280 (1882).

Type, *T. sanguinea*, Moore.
Range. Sikhim.

Palpi porrect, the 2nd joint angled, the 2nd and 3rd joints very long. Antennæ minutely ciliated. First segment of abdomen with very large paired corneous belt-like processes on the underside without tufts of scales. Fore wing with the costa arched near the base; the apex acute, the outer margin excurved at veins 2, 3, 4; veins 3, 4, 5 from near angle of cell; 6 from upper angle; 7, 8, 9 stalked. Hind wing with the apex acute, outer margin excurved at centre; veins 3 and 4 stalked; 5 from above angle of cell; 6 and 7 on a short stalk; 8 from centre of cell.

1517. **Topadesa sanguinea**, *Moore, Lep. Atk.* p. 280; *C. & S.* no. 4755.

♂. Palpi red and yellow below, purplish brown above; abdomen fuscous. Fore wing fiery red, suffused with brown, especially

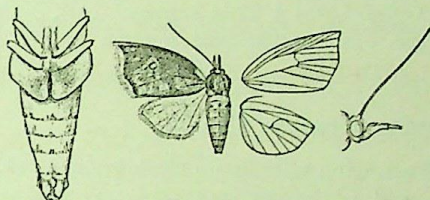



Fig. 92.—*Topadesa sanguinea*, ♂. 1/1.

on costal area; a yellow basal streak on the costa; a white spot at end of cell on a vermilion patch; costa at apex, outer margin, and cilia bright canary-yellow. Hind wing ochreous.
Hab. Sikhim. *Exp*. 28 millim.

Subfamily NOLINÆ.

The species of this group of *Arctiidæ* are of small or moderate size, with buttons or ridges of raised scales on the fore wing; they live chiefly on the trunks of trees, and on the lichens growing there the larvæ feed *.

Larvæ with eight pairs of legs and sparsely covered with hair.

* The *Nolinæ* approach closely the Noctuid subfamily *Sarrothripinæ*, from some of the forms of which they are hardly structurally separable.

Key to the Genera.

a. Palpi porrect.
  a'. Fore wing with veins 9 and 10 absent.
    a². Hind wing triangular, the outer margin straight .... 1. DELTAPTERUM, p. 138.
    b². Hind wing rounded.
      a³. Palpi of moderate length ...... 2. NOLA, p. 138.
      b³. Palpi very long .... 3. RHYNCHOPALPUS, p. 142.
  b'. Fore wing with veins 9 and 10 present .... 4. PISARA, p. 144.
b. Palpi upturned .... 5. SELCA, p. 146.

Genus **DELTAPTERUM**, nov.

Type, *D. peguense*, Hmpsn.
Range. Burma.

Palpi of moderate length, porrect, and thickly scaled. Antennæ of male fasciculate. Mid tibiæ with one pair of spurs, hind tibiæ with two pairs. Fore wing with veins 3, 4, 5 from lower angle of cell; 6 from upper angle; 7 and 8 stalked; 9 and 10 absent. Hind wing triangular; the outer margin straight; anal angle slightly lobed; veins 3 and 4 from angle of cell, 5 absent, 6 and 7 from upper angle. A longitudinal fold in cell of fore wing on underside.

1518. **Deltapterum peguense**, n. sp.

♂. Grey. Fore wing with some black striæ on the costa; very indistinct ante- and postmedial curved lines; two waved submar-

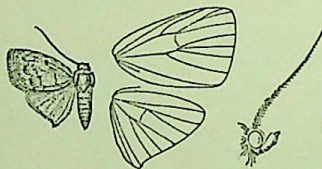



Fig. 93.—*Deltapterum peguense*, ♂. ½.

ginal lines. Hind wing white. Underside of fore wing with black scales in the longitudinal fold.

Hab. E. Pegu, 4000 feet (*Doherty*). *Exp*. 19 millim. Type in coll. Elwes.

Genus **NOLA**.

Nola, *Leach, Edinb. Encyl.* ix, p. 135 (1815).
Rœselia, *Hübn. Verz.* p. 397 (1818).
Uraba, *Wlk. Cat.* xxviii, p. 448 (1863).
Toxoloma, *Feld. Reis. Nov.* p. 9, pl. 100, fig. 16 (1875).

Tribunta, *Wlk. Cat.* xxxiv, p. 1506 (1865).
Lebena, *Wlk. Cat.* xxxv, p. 1901 (1866).
Minnagora, *Wlk. Cat.* xxxv, p. 1902.
Argyrophyes, *Grote, Bull. Buffalo Soc.* i, 1874, p. 175.
Sorocostia, *Rosenst. A. M. N. H.* (5) xvi, 1885, p. 435.

Type, *N. cucullatella*, Linn., from Europe.
Range. Universally distributed.

Palpi porrect, of moderate length, and thickly scaled. Antennæ fasciculated in male. Mid tibiæ with one pair of spurs, hind tibiæ with two pairs. Fore wing with vein 5 from angle of cell; 6 from upper angle; 7 and 8 stalked; 9 and 10 absent. Hind wing with vein 3 from before angle of cell; 5 absent; 6 and 7 stalked; 8 from middle of cell.

SECT. I. Fore wing with veins 3 and 4 stalked; palpi with the 3rd joint nearly naked.

1519. **Nola basimicans**, n. sp.

♂. Fore wing with the basal half bright golden brown, the outer half grey; slightly recurved and irregular subbasal, medial, postmedial, and submarginal lines; a marginal line; two raised tufts of scales in the cell. Hind wing white, with a fuscous tinge towards outer margin. Underside of fore wing suffused with fuscous.

Hab. E. Pegu, 4000 feet (*Doherty*). *Exp.* 13 millim. Type in coll. Elwes.

SECT. II. Fore wing with veins 3 and 4 from cell; palpi with the 3rd joint heavily scaled.

1520. **Nola fragilis**, *Swinh. Trans. Ent. Soc.* 1890, p. 184.

♂. Head, thorax, and abdomen white. Fore wing white; an antemedial red and dark brown band from the costa ending in a point on vein 1; a broad medial red-brown band with irregularly placed patches of silver scales on it; an indistinct submarginal fuscous waved line; some fuscous suffusion on the margin. Hind wing white.

Hab. Rangoon. *Exp.* 14 millim.

1521. **Nola erythrostigmata**, n. sp.

♂. White. Fore wing with a basal dark patch; two red-brown spots on the costa, with a diffused fuscous band outwardly edged by a double waved line from below them to inner margin; a submarginal waved line. Hind wing white, with a slight fuscous suffusion and indistinct spot at end of cell. Underside of fore wing suffused with fuscous; hind wing with dark specks on the costa and distinct spot at end of cell.

Hab. Nága Hills (*Doherty*). *Exp.* 13 millim. Type in coll. Elwes.

1522. **Nola denticulata,** *Moore, Lep. Atk.* p. 287.

♂. Head, thorax, and abdomen white; vertex of thorax and basal segment of abdomen black above. Fore wing white, slightly suffused with brown; indistinct antemedial, medial, postmedial, and submarginal lines, the postmedial line denticulate, the others waved; the area between the subbasal and medial lines suffused with black; the basal two-thirds of wing irrorated with a few silvery-white scales. Hind wing white, with a slight fuscous tinge.

Hab. Sikhim; Nágas. *Exp.* 32 millim.

1523. **Nola confusalis,** *Herr.-Schäffer, Eur. Schmett.* ii, p. 164.
Rœselia sikkima, *Moore, Lep. Atk.* p. 287.

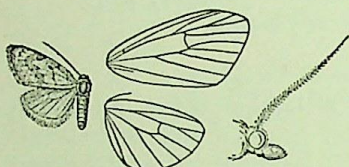



Fig. 94.
Nola confusalis, ♂. 1/1.

Head and thorax grey, irrorated with brown; abdomen pale fuscous. Fore wing white, suffused and irrorated with brown; some dark striæ on the costa; an indistinct angled antemedial line; a dark patch at middle of costa; an indistinct excurved double postmedial line; a waved submarginal line. Hind wing fuscous.

Hab. Europe; Sikhim, 7–10,000 feet. *Exp.* 22 millim.

1524. **Nola grisalis,** *Hmpsn. Ill. Het.* ix, p. 88, pl. 158, fig. 9.

Differs from *confusalis* in having the palpi black at sides; a dark speck on the costa of fore wing near base; the medial patch reduced to a speck, the postmedial and submarginal lines to series of specks.

Hab. Ceylon. *Exp.* 22 millim.

1525. **Nola angulata,** *Moore, P. Z. S.* 1888, p. 393; *Butl. Ill. Het.* vii, pl. 122, fig. 14.
Rœselia fraterna, *Moore, P. Z. S.* 1888, p. 393.

Differs from *confusalis* in having a dark basal patch on costa of fore wing; the antemedial line broad and evenly curved.

Hab. Dharmsála; Sikhim; Nilgiris; Ceylon. *Exp.*, ♂ 16, ♀ 20 millim.

1526. **Nola astigma,** n. sp.

Differs from *angulata* in the fore wing being suffused with brown; the antemedial curved band more prominent, and with a diffused brown band inside it; the double postmedial waved line more prominent; the irregular submarginal line also more prominent; no dark medial patch on costa; the area between the

raised tufts in the cell depressed. Underside of hind wing with a dark spot at end of cell.

Hab. Sikhim (*Elwes*); Nága Hills, 3000 feet; Manipur, 6000 feet (*Doherty*). *Exp.* 21 millim. Type in coll. Elwes.

1527. **Nola ceylonica,** *Hmpsn. Ill. Het.* ix, p. 88, pl. 158, fig. 13.

♂. Head, thorax, and abdomen brownish white. Fore wing white, suffused with brown and irrorated with a few black scales; two medial black patches on the costa, the first with a waved line from it to inner margin; postmedial and submarginal nearly straight series of black specks. Hind wing pale fuscous.

Hab. Ceylon. *Exp.* 12 millim.

1528. **Nola pascua,** *Swinh. P. Z. S.* 1885, p. 293, pl. 20, fig. 6; *Hmpsn. Ill. Het.* ix, pl. 175, fig. 9 (larva); *C. & S.* no. 640.

Differs from *confusalis* in having the ground-colour of body and wings pure white; a pale brown subbasal costal patch; large prominent medial and postmedial costal patches; the double curved postmedial and waved submarginal lines edged with dark scales.

Larva. Head brown; the first two somites reddish, third to ninth yellow; broad black sublateral stripes on fourth to sixth somites continued as narrow lines to the ninth; the last two somites reddish; dorsal area darker, a purple lateral stripe; each somite with four to six fasciculi of short pale hairs. Feeds in fleshy shoots of *Rubus*, but spins in the open.

Hab. Nágas; Poona; Nilgiris; Ceylon. *Exp.*, ♂ 14, ♀ 19 millim.

1529. **Nola tumulifera,** *Hmpsn. Ill. Het.* ix, p. 88, pl. 158, fig. 19.

Differs from *pascua* in having the palpi blackish at sides; the basal half of costa of fore wing suffused with red-brown; the subbasal and medial patches absent; the postmedial line single and consisting of a series of almost conjoined black specks; the submarginal waved line not edged with black scales. Hind wing very pale fuscous.

Hab. Ceylon. *Exp.* 17 millim.

1530. **Nola nigrifascia,** *Hmpsn. Ill. Het.* viii, p. 48, pl. 139, fig. 15.

♀. Differs from *tumulifera* in having the palpi white at sides; the brown suffusion on the costa of fore wing absent; the postmedial line of black specks more curved and with some fuscous suffusion before it.

Hab. Nilgiris; Ceylon. *Exp.* 26 millim.

1531. **Nola hampsoni,** *Kirby, Cat. Het.* p. 376.
Nola minuta, *Hmpsn. Ill. Het.* viii, p. 48, pl. 139, fig. 14 (præocc.).

♂. Head, thorax, and abdomen pale brown. Fore wing pale

brown irrorated with black scales; traces of subbasal, antemedial, and medial dark costal patches, of an antemedial waved line, and postmedial and submarginal series of specks. Hind wing pale fuscous.

Hab. Nágas; Margharita, Assam; Nilgiri plateau. *Exp.* 14 millim.

1532. **Nola lativittata,** *Moore, Lep. Atk.* p. 286.

Head, thorax, and abdomen white. Fore wing white, with a broad oblique brown band from the basal half of costa to inner margin beyond middle; two dark specks on it in the cell; a postmedial line joining the oblique band at inner margin; a short striga from costa before apex; a marginal band widest at middle. Hind wing white; the apical area suffused with pale brown.

Hab. Sikhim. *Exp.* 20 millim.

1533. **Nola major,** *Hmpsn. Ill. Het.* viii, p. 48, pl. 139, fig. 13.

♀. Palpi black at sides; head and thorax greyish white; abdomen brownish fuscous, with pale segmental bands. Fore wing white or grey; a blackish basal patch on the costa; another at middle; traces of antemedial and medial lines; a dentate postmedial line sometimes reduced to specks on the nervules; an indistinct diffused waved submarginal band; some marginal suffusion and a series of black specks; cilia chequered pale and dark fuscous. Hind wing dark fuscous.

Hab. Nilgiris, western slopes, 3000 feet. *Exp.* 26 millim.

1534. **Nola negrita,** n. sp.

♂. Uniform fuscous; fore wing with a doubly angled antemedial black line; a curved medial line; a deep black mark on the discocellulars; a doubly curved postmedial line.

Hab. Bangalore (*Minchin*). *Exp.* 14 millim. Type in coll. Druce.

Genus **RHYNCHOPALPUS.**

Rhynchopalpus, *Hmpsn. Ill. Het.* ix, p. 89 (1893).

Type, *R. brunellus*, Hmpsn.

Range. N.W. Himalayas; Sikhim; Nága Hills; Burma; Nilgiris; Ceylon.

Palpi long and porrect, the first two joints thickly scaled. Antennæ heavily bipectinated in male. Mid tibiæ with one pair of spurs, hind tibiæ with two pairs. Fore wing with vein 3 from before angle of cell; 4 and 5 from the angle; 6 from upper angle; 7 and 8 stalked; 9 and 10 absent. Hind wing with vein 3 from before angle of cell; 5 absent; 6 and 7 stalked; 8 from middle of cell.

SECT. I. Palpi very long.

1535. **Rhynchopalpus argentalis**, *Moore, P. Z. S.* 1867, p. 89; *C. & S.* no. 4500.

Palpi black, the end of 2nd joint and 3rd white. Head and thorax white, the latter spotted with black; abdomen pale fuscous. Fore wing white, suffused with fuscous and irrorated with silvery scales; a large basal blackish patch; another on the central costal area; some marginal blackish suffusion; traces of antemedial, medial, postmedial, and submarginal waved lines. Hind wing pale fuscous; a dark line on discocellulars; cilia of both wings chequered pale and dark fuscous, the tips dark.

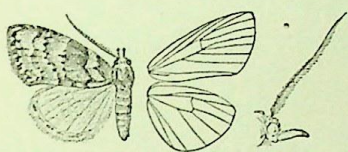



Fig. 95.
Rhynchopalpus argentalis, ♂. 1/1.

Larva pale yellow, the 1st and terminal somite orange; paired black dorsal spots on 3rd somite and single spots on 6th, 10th, and 11th somites; a tuft of reddish hair from behind the head, to which are attached the various cast skins of the head, the first moult at the apex and the others at intervals; thus mimicking a Coccid which lives on the same leaves and carries its exuviæ on the anal segments. The tuft of hair with the exuviæ of head is attached to the cocoon, which is spun on a twig and covered with scales of bark (*Harford, Dudgeon*).

Hab. N.W. Himalayas; Sikhim. *Exp.* 34 millim.

1536. **Rhynchopalpus dentatus**, n. sp.

♀. Head, thorax, and abdomen whitish; thorax with the vertex more or less suffused with fuscous; abdomen with fuscous dorsal tufts. Fore wing pale brown; a broad fuscous medial band edged with black, the orbicular and reniform spots formed by tufts of raised white scales, the band sends a long tooth outwards beyond the lower angle of cell and has a diffused white band beyond it, then a blackish band with a lunulate white line on its outer edge; a lunulate black marginal line; cilia fuscous, with pale streaks at the veins. Hind wing pale fuscous; a curved medial black line bent inwards below the cell.

Hab. Dalhousie (*Harford*). *Exp.* 34 millim.

1537. **Rhynchopalpus brunellus**, *Hmpsn. Ill. Het.* ix, p. 89, pl. 158, fig. 31.

Head and thorax white, slightly irrorated with black, the collar sometimes banded with black; abdomen brownish white. Fore wing white, suffused with pale brown and irrorated with black; oblique ante- and postmedial series of black specks; a marginal series of specks; traces of a pale submarginal line; the brown suffusion deepest on costa before the postmedial specks and on the

margin, more prominent in some specimens than others. Hind wing white or fuscous.

Hab. Nágas; Ceylon. *Exp.* 21 millim.

1538. **Rhynchopalpus fasciatus**, n. sp.

♂. Brownish grey. Fore wing with an erect black somewhat irregular medial band; an inwardly oblique series of postmedial black specks on the nervules from the costa to vein 2; traces of a submarginal waved line; the nervules of the outer area fuscous. Hind wing pale fuscous.

Hab. Nága Hills, 6000 feet (*Doherty*). *Exp.* 13 millim. Type in coll. Elwes.

SECT. II. Palpi somewhat shorter.

1539. **Rhynchopalpus cingalesa**, *Moore, Lep. Ceyl.* ii, p. 66, pl. 104, fig. 1; *C. & S.* no. 728.
Rœselia culaca, *Swinh. Trans. Ent. Soc.* 1891, p. 137, pl. 8, fig. 9.

♂. Head, thorax, and abdomen white; palpi blackish at sides. Fore wing white; a black spot on the costa at base; a curved antemedial line with dark spots on it at costa and middle of cell; a highly curved medial line joined at lower angle of cell by an erect line from the costa; traces of postmedial and submarginal waved lines. Hind wing white, with a slight fuscous tinge.

Hab. Nilgiris; Ceylon. *Exp.* 20 millim.

Genus **PISARA**.

Pisara, *Wlk. Journ. Linn. Soc.* 1862, p. 117.

Type, *P. opalina*, Wlk., from Borneo.

Range. Ceylon; Burma; Borneo.

Palpi porrect, thickly scaled, and of moderate length. Antennæ fasciculated in male. Mid tibiæ with one pair of spurs, hind tibiæ with two pairs. Fore wing with vein 3 from before end of cell; 4 and 5 from the end; 7, 8, 9 stalked. Hind wing with veins 3 and 4 stalked; 5 from angle of cell; 6 and 7 from upper angle; 8 from middle of cell.

SECT. I. Fore wing with vein 6 present.

1540. **Pisara acontioides**, *Wlk. Journ. Linn. Soc.* 1862, p. 118.

♀. Head and thorax pure white; abdomen pale fuscous. Fore

wing pure white; a large fuscous patch on the basal half of the costa; a dark postmedial curved line, the area beyond it fuscous except at apex; tufts of opalescent scales on the basal patch, at and beyond the end of cell, on the postmedial line and marginal fuscous area. Hind wing white; the outer area suffused with fuscous.

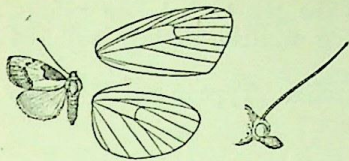



Fig. 96.—*Pisara acontioides*, ♂. ½.

Hab. Ceylon; Borneo. *Exp.* 18 millim.

SECT. II. Fore wing with vein 6 absent.

1541. **Pisara lucidalis**, *Wlk. Cat.* xxxi, p. 245.

♀. Head and thorax pure white; abdomen whitish fuscous. Fore wing white; a triangular subbasal brown patch on the costa; a medial band from the costa to vein 1; a postmedial band with waved outer edge; some reddish-brown suffusion on outer area; a fan-shaped tuft of long scales at end of cell. Hind wing white; a dark line on the discocellulars; the outer area suffused with fuscous.

Hab. Ceylon; Borneo. *Exp.* 16 millim.

1542. **Pisara rufescens**, n. sp.

♂. Head, thorax, and abdomen white, the last with a fuscous tinge. Fore wing with the basal area white; the outer half from a point on the costa before the middle and on inner margin at the postmedial line suffused with rufous, the apex being pale; patches of purplish-grey scales at centre of costa and outer angle; a postmedial line excurved round end of cell. Hind wing pale reddish brown.

Hab. Rangoon (*Scott*). *Exp.* 18 millim. Type in B. M.

1543. **Pisara laminata**, *Hmpsn. Ill. Het.* viii, p. 75, pl. 145, fig. 5.

♀. Head and thorax white; abdomen fuscous, ringed with white. Fore wing white; a brown and black basal patch on the costa; traces of an antemedial curved black line; a large black and brown triangular medial patch on the costa, suffused with raised metallic scales; a postmedial line highly excurved beyond the cell, the whole area beyond it—except the costal area, which has some pale brown marks on it—black, suffused with raised metallic scales. Hind wing and underside fuscous.

Hab. Nilgiris. *Exp.* 24 millim.

1544. **Pisara argyria**, n. sp.

♂. Silvery white. Fore wing with a black spot on base of

costa; a large black-brown medial subtriangular costal patch, and black spot below end of cell; indistinct sinuous postmedial and submarginal lines; the area beyond the postmedial line rufous, except the costal portion. Hind wing whitish, slightly suffused with fuscous towards apex.

Hab. Sikhim (*Knyvett*). *Exp.* 26 millim. Type in coll. Knyvett.

1545. **Pisara semirufa**, n. sp.

Head and collar white; thorax and abdomen rufous, suffused with white. Fore wing with the base and outer half rufous; the medial area white: sinuous antemedial, postmedial, and submarginal dark lines, the two latter highly excurved beyond cell, the postmedial line with blackish suffusion inside it. Hind wing pale ochreous.

Hab. Sikhim (*Knyvett*). *Exp.* 22 millim. Type in coll. Knyvett.

Genus **SELCA**.

Selca, *Wlk. Cat.* xxxiv, p. 1218 (1865).
Callinola, *Butl. Ill. Het.* vii, p. 33 (1889).

Type, *S. latifascialis*, Wlk., from Borneo.

Range. S. America; Himalayas; Nága Hills; Borneo.

Palpi upturned, not reaching vertex of head. Antennæ bipectinate. Mid tibiæ with one pair of spurs, hind tibiæ with two pairs. Fore wing with vein 3 from before angle of cell; 4 and 5 from the angle; 6 from upper angle; 7, 8, 9, 10 stalked. Hind wing with vein 5 from above angle of cell; 6 and 7 stalked; 8 from centre of cell.

SECT. I. Hind wing with veins 3 and 4 stalked, or 4 rarely absent; antennæ of male with the branches long.

1546. **Selca scripta**, *Moore, P. Z. S.* 1888, p. 393; *Butl. Ill. Het.* vii, pl. 122, fig. 13.
Rœselia inscripta, *Moore, Lep. Atk.* p. 287.

♂. Head, thorax, and abdomen brownish grey. Fore wing grey; a double antemedial brown and black line; a medial black line consisting of black streaks on the nervules beyond the cell and a waved line below it; a double postmedial black and brown line; a series of submarginal specks on the veins, those nearest the apex and outer angle large. Hind wing pale fuscous.

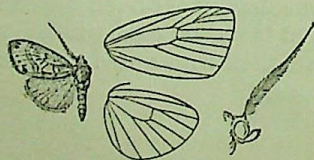



Fig. 97.—*Selca scripta*, ♂. 1/1.

Hab. Kángra; Sikhim. *Exp.* 20 millim.

1547. **Selca strigivena**, n. sp.

♂. Differs from *scripta* in the head, thorax, and abdomen being pale brown. Fore wing with the curved ante- and postmedial lines single and without the brown lines parallel to them; the medial line less irregular; the submarginal line very indistinct and without the dark patches near apex and outer angle; the nervures of the outer area streaked with black.

Hab. Sikhim interior (*Möller*). *Exp.* 31 millim. Type in coll. Elwes.

1548. **Selca ascripta**, n. sp.

♂. Fore wing grey, with a broad fuscous band along the costa from the base to near apex, where it expands into a large patch, sending a spur to outer margin above the centre and leaving the apex grey; traces of a waved postmedial line; a more distinct submarginal waved line. Hind wing pale fuscous.

Hab. Nága Hills, 3000 feet (*Doherty*). *Exp.* 28 millim. Type in coll. Elwes.

1549. **Selca nitida**, n. sp.

♀. Head and thorax white, irrorated with brown; palpi and antennæ black. Fore wing silvery white; a black basal patch on the costa; an antemedial angled line with a blackish patch beyond it on the costa and a black spot in the cell; a postmedial line angled beyond the lower angle of cell; a submarginal dentate line starting from a black patch on the costa; the area between the ante- and postmedial lines slightly suffused with brown; a marginal black line; cilia pale, streaked with black at the veins. Abdomen and hind wing fuscous.

Hab. Manipur; E. Pegu (*Doherty*). *Exp.* 22–29 millim. Type in coll. Elwes.

SECT. II. Hind wing with vein 4 absent; antennæ of male with the branches short.

1550. **Selca indistincta**, n. sp.

♂. Fore wing grey, suffused with fuscous; traces of numerous waved dark lines. Hind wing pale fuscous. Underside fuscous, with a dark spot at end of cell of hind wing.

Hab. Nága Hills, 3000 feet (*Doherty*). *Exp.* 17 millim. Type in coll. Elwes.

Species formerly recorded as Indian which are omitted.

Cycnia sparsigutta, Wlk., C. & S. no. 852. Type lost; description unrecognizable.

Hypoprepia? hæmatopus, Feld., C. & S. no. 630, is a Tinea.
Callimorpha venus, Prittwitz, C. & S. no. 730, probably = *Eucyane amica*, Cram., from Surinam.
Pentacitrotus vulneratus, Butl., C. & S. no. 733, is a Tinea.
Cydosia punctella, Cram., C. & S. no. 634, is a Tinea.
Barsine tripartita, Wlk., C. & S. no. 708. Type lost; description not recognizable.
Spilosoma fusifrons, Wlk., C. & S. no. 756. Type lost; description not recognizable.

Family AGARISTIDÆ.

A family of day-flying or crepuscular moths of bright colours, with stout bodies, simple antennæ dilated distally, and the terminal joint of the palpi naked. Proboscis present. Legs with two pairs of spurs. Frenulum present. Fore wing with vein 1 *a*

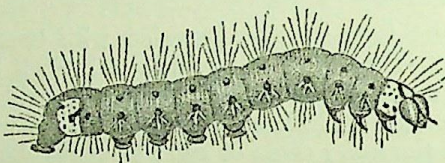



Fig. 98.—Larva of *Zalissa transiens*. 1/1.
(From Moore, Lep. E. I. Co. pl. 13, fig. 5.)

separate from 1 *b*, 1 *c* absent; 5 from close to lower angle of cell. Hind wing with two internal veins; 5 from the centre of discocellulars or absent; 8 bent down and touching 7 near the base.

Larvæ with lateral tufts of hair and long scattered hairs.

Pupa naked.

Key to the Genera.

a. Hind wing with vein 5 from the centre of the discocellulars.
  a'. Fore wing with no areole .... 1. EUSEMIA, p. 149.
  b'. Fore wing with an areole.
    a^2. Fore wing with vein 10 anastomosing with 8 to form the areole .... 2. CHELONOMORPHA, [p. 154.
    b^2. Fore wing with vein 9 rising from 10 and anastomosing with 8 to form the areole.
      a^3. Fore wing with vein 7 from end of areole; hind wing with vein 2 from near end of cell .... 3. PHALÆNOIDES, p. 154.

Genus EUSEMIA.

Eusemia, *Dalm. Prodr. Monog. Castn.* p. 26 (1825).
Episteme, *Hübn. Verz.* p. 179 (1818), gen. non descr.

Type, *E. lectrix*, Linn., from China.
Range. Chinese, Indian, Ceylonese, and Malayan subregions.
Palpi upturned, the terminal joint long and naked. Antennæ simple and dilated. Fore wing with vein 5 from near angle of cell; 6 from upper angle; 7, 8, 9, 10 stalked. Hind wing with vein 5 from the centre of discocellulars.

SECT. I. Fore wing with vein 3 from before end of cell. Hind wing with veins 6 and 7 from end of cell.

A. *Fore wing with yellow, hind wing with orange markings.*

1551. **Eusemia proxima**, *Wlk. Cat.* i. p. 50; *C. & S.* no. 329.

Head, thorax, and abdomen black, the last with the medial segment orange. Fore wing black, with an irregular oblique yellow medial band from veins 9 to 1; a postmedial narrow band from veins 9 to 5: two indistinct metallic-blue lines at middle and end of cell; male with an orange streak on the basal half of the costa. Hiud wing black, with a broad orange medial band, widest at the inner margin.
Hab. Assam. *Exp.* 62 millim.

1552. **Eusemia amatrix**, *Westw. Cab. Or. Ent.* p. 68, pl. 33, fig. 4; *C. & S.* no. 311.
Eusemia aruna, *Moore, Lep. E. I. Co.* p. 288; *C. & S.* no. 312.

Differs from *proxima* in the abdomen being ringed with orange. Fore wing shot with brilliant blue; the medial yellow band broken up into three irregularly placed spots; the postmedial band into four spots; cilia white at apex. Hind wing with a black spot on the orange band below the costa; the marginal area shot with blue; cilia white at apex in male, all white in female.
Hab. Sikhim. *Exp.* 75 millim.

1553. **Eusemia pulchra,** *Butl. A. M. N. H.* (4) xv, 1875, p. 143, pl. 13, fig. 4; *C. & S.* no. 330.

Differs from *amatrix* in having no blue sheen on either wing. Fore wing with an outwardly oblique yellow band from the centre of the costa to near outer angle. Hind wing with the band orange-red, broader, and with no black spot on it; the black margin regular.

Hab. ? Meerut. *Exp.* 70 millim.

B. *With no orange markings on the hind wing.*

1554. **Eusemia vulcania,** *Butl. Ent. Mo. Mag.* xii, 1875, p. 123; *C. & S.* no. 337.

Fore wing as in *amatrix*, except that the four postmedial spots are white. Hind wing black, shot with blue; the costa of both wings reddish brown in the male; cilia white at apex of fore wing and centre of hind wing. Collar orange.

Hab. Burma. *Exp.* 60 millim.

C. *With no yellow or orange markings.*

1555. **Eusemia albomarginata,** *Moore, P. Z. S.* 1872, p. 569; *C. & S.* no. 310.

Eusemia opheltes, *Druce, P. Z. S.* 1885, p. 518; *Waterh. Aid*, ii, pl. 172, fig. 5.

Collar ringed with white; pectus fulvous. Both wings entirely shot with blue; the outer margins and cilia white; male with an orange streak on basal part of costa of fore wing.

Some specimens have white spots beyond the cell of fore wing; in the Burmese form *opheltes* the white margin is broader than in the typical Andaman form.

Hab. Burma; Andamans. *Exp.* 75 millim.

SECT. II. Fore wing with vein 3 from end of cell. Hind wing with veins 6 and 7 from end of cell.

A. *With no orange on hind wing.*

1556. **Eusemia victrix,** *Westw. Cab. Or. Ent.* pl. 33, fig. 3; *C. & S.* no. 336.

Eusemia silhetensis, *Butl. A. M. N. H.* (4) xv, 1875, p. 139; *C. & S.* no. 332.

Eusemia tyrianthina, *Butl. Ent. Mo. Mag.* xii, 1875, p. 116; *C. & S.* no. 334.

Pectus orange; end of abdomen ringed black and orange; claspers in male black. Fore wing black, with two blue patches at base; a

blue spot at end of cell and blue streaks along the marginal nervules; two confluent yellow spots forming a medial band from below the costa to vein 1; a small postmedial white or yellow spot below the costa and two others on each side of vein 4. Hind wing black shot with blue; a broad marginal brilliant bue band.

In the variety *tyrianthina* the two medial spots of the fore wing are separated and placed obliquely; in *silhetensis* the postmedial spots are absent.

Hab. Throughout N.E. India from Nepal to Yunnan and Burma. *Exp.* 77–83 millim.

1557. **Eusemia orientalis**, *Butl. A. M. N. H.* (4) xv, 1875, p. 139; *id. Ill. Het.* v, pl. 82, fig. 2; *C. & S.* no. 327.

Differs from *victrix* in there being four postmedial spots to the fore wing conjoined into a maculate band. Hind wing with the blue marginal band narrow; abdomen with the extremity orange, without a black ring.

Hab. Mussooree. *Exp.* 66 millim.

B. *Hind wing with the basal two-thirds orange, broken by black patches.*

1558. **Eusemia dentatrix**, *Westw. Cab. Or. Ent.* p. 68, pl. 83, fig. 5; *C. & S.* no. 319.

Differs from *victrix* in the abdomen being ringed black and orange; collar and pectus orange. Hind wing with a broad orange medial band broken by a highly irregular black patch from the costa.

Hab. Nepal; Sikhim; Bhutan; Assam; Sylhet. *Exp.* 75 millim.

SECT. III. Hind wing with veins 6 and 7 stalked. Fore wing with blue spots near the base.

A. *Hind wing black, with orange spots near anal angle.*

1559. **Eusemia negrita**, n. sp.

♂. Collar black; tegulæ spotted with yellow; abdomen with orange segmental bands below, and on third and anal segments above. Fore wing with a broad medial nearly regular yellow band; the postmedial spots absent; the submarginal white spots obsolete towards outer angle, obsolescent towards the costa, the spot between veins 4 and 5 present. Hind wing with a slight orange streak in the cell and on median nervure near the base; one orange spot near anal angle; the white spots obsolescent above.

Hab. Enlay, S. Shan States (*Manders*). *Exp.* 75 millim. Type in coll. Elwes.

1560. **Eusemia nigripennis**, *Butl. A. M. N. H.* (4) xv, 1875, p. 140; *Moore, Lep. Ceyl.* ii, pl. 94, fig. 3; *C. & S.* no. 325.

Collar and tegulæ yellow-spotted; abdomen with ventral yellow bands. Fore wing with a medial yellow band of two irregularly superposed spots; a maculate postmedial band from below the costa to vein 3, broken at vein 5; a submarginal series of six small white spots. Hind wing black, with four small white submarginal spots, and hardly a trace of the orange spots near anal angle.

Hab. Ceylon. *Exp.* 80 millim.

1561. **Eusemia adulatrix**, *Koll. Hügel's Kaschmir*, iv, p. 464, pl. 20, fig. 1; *C. & S.* no. 308.
Eusemia bellatrix, *Westw. Cab. Or. Ent.* p. 67; *C. & S.* no. 315.
Eusemia afflicta, *Butl. Ent. Mo. Mag.* xii, 1875, p. 118; *C. & S.* no. 309.
Eusemia sectinotis, *Butl. Ent. Mo. Mag.* xii, 1875, p. 117; *C. & S.* no. 331.
Eusemia contracta, *Butl. Ent. Mo. Mag.* xii, 1875, p. 117; *C. & S.* no. 318.
Eusemia simplex, *Butl. Ent. Mo. Mag.* xii, 1875, p. 118; *C. & S.* no. 333.

The submarginal series of white spots on both wings larger than in *nigripennis*; the spots near anal angle of hind wing small and red in N.-Indian, larger and orange in S.-Indian, specimens; abdomen banded orange and black; the basal blue spots of the fore wing very variable in size, as also are the medial and postmedial spots.

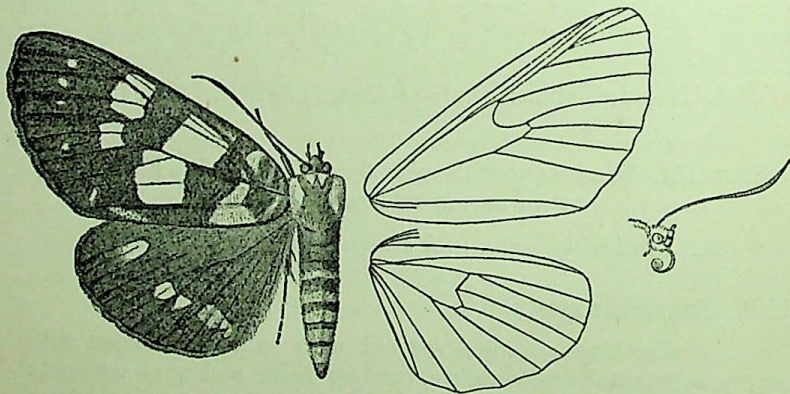



Fig. 99.—*Eusemia adulatrix*, ♀. ½.

In the form *afflicta* the postmedial spots are reduced in size; in *sectinotis* the medial spots, and in *contracta* both medial and postmedial are reduced; in *simplex* the medial spots are narrow and regularly disposed; these variations occurring irrespective of locality.

Hab. The whole of India and Burma. *Exp.* 80 millim.

B. *Hind wing with the basal two-thirds orange, broken by a black patch.*

1562. **Eusemia maculatrix**, *Westw. Nat. Libr.* p. 88, pl. 2, fig. 3; *C. & S.* no. 324 (part.).
Eusemia dives, *Butl. Ill. Het.* v, p. 18; *C. & S.* no. 321.
Eusemia nipalensis, *Butl. A. M. N. H.* (4) xv, 1875, p. 140; *C. & S.* no. 326.

Differs from *adulatrix* in the medial spots of the fore wing being usually smaller and separated. Hind wing with the basal two-thirds orange, broken by a small mark below the costa and a large irregular patch near inner margin connected by a streak with the marginal band, which is widest at apex and with one to four white spots on it.

The Sikhim form *nipalensis* has the hind wing orange-red, the black markings being more extensive in a form from E. Tibet.

Hab. Himalayas, east of Nepal; Burma; Java. *Exp.* 80 millim.

1563. **Eusemia irenea**, *Boisd. Rev. Zool.* 1874, p. 84; *C. & S.* no. 323.
Eusemia distincta, *Butl. A. M. N. H.* (4) xv, 1875, p. 140; *id. Ill. Het.* v, pl. 82, fig. 3; *C. & S.* no. 320.

Differs from *maculatrix* in a white spot being more or less developed in the base of the cell; the medial spots yellow in *distincta*, white in *irenea*; the lower spot sometimes being white, the upper yellow; the postmedial spots white; a marginal series of steel-blue marks increasing in size towards the apex, but sometimes almost obsolete. Hind wing with the black margin broader.

Hab. Sikhim; Khásis; Nágas; Sumatra. *Exp.* 75–91 millim.

1564. **Eusemia latimargo**, *Hmpsn. Ill. Het.* viii, p. 45, pl. 139, fig. 24.

Thorax with the spots white. Fore wing with the medial spots yellow; the postmedial obsolete. Hind wing with the basal area orange-red; the black margin broad.

Hab. Malabar coast. *Exp.* 75 millim.

1565. **Eusemia fasciatrix**, *Westw. Cab. Or. Ent.* p. 67; *C. & S.* no. 324 (part.).
Eusemia communicans, *Wlk. Cat.* xxxi, p. 50; *C. & S.* no. 316.
Eusemia communis, *Butl. A. M. N. H.* (4) xv, 1875, p. 140, pl. 13, fig. 1; *C. & S.* no. 317.

Abdomen ringed buff and black. Fore wing with the medial and postmedial bands much reduced and very variable in size, either conjoined or separate, and white or buff; the submarginal series white. Hind wing with the black patch on the orange band smaller, the black marginal area narrower.

Hab. Cachar; Assam; Nágas; Cambodia; Penang. *Exp.* 66 millim.

1566. **Eusemia vetula**, *Hübn. Zutr.* no. 329, figs. 657, 658; *C. & S.* no. 335.

The submarginal series of spots on both wings buff.
Hab. Java and ? Assam. *Exp.* 70 millim.

Genus CHELONOMORPHA.

Chelonomorpha, *Motsch. Et. Ent.* ix, p. 30 (1860).

Type, *C. japona*, Motsch., from Japan.
Range. Japan; Khási Hills.
Differs from *Eusemia*, Sect. I., in veins 9 and 10 of the fore wing arising separately from 7 and 8 and then anastomosing with them to form an areole.

1567. **Chelonomorpha austeni**, *Moore, Lep. Atk.* p. 11; *C. & S.* no. 313.

Head and thorax black, tegulæ yellow; abdomen ringed orange and black. Fore wing black; two yellow spots in the cell, one below it, two beyond, and a submarginal series of small white spots; some metallic-blue scales on discocellulars. Hind wing

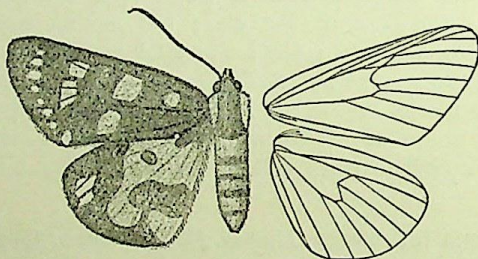



Fig. 100.—*Chelonomorpha austeni*, ♀. ½.

with a broad orange-yellow band; a black spot at end of cell; a geminate spot near anal angle, connected by a bar with the marginal black band which is wide at apex; some subapical white spots.
Hab. Khásis. *Exp.* 53 millim.

Genus PHALÆNOIDES.

Phalænoides, *Lewin, Lep. N. S. Wales*, p. 2 (1822).

Type, *P. glycinæ*, from Australia.
Range. Tibet; N.E. India; Java; Ceram; New Guinea; Australia.
Fore wing long and narrow. Hind wing with vein 2 given off near end of cell. Abdomen slender; male with an anal tuft of hair.

1568. **Phalænoides funebris,** *Moore, P. Z. S.* 1872, p. 569; *Waterh. Aid,* ii, pl. 127, fig. 4; *C. & S.* no. 322.

Head and thorax black; abdomen ringed black and orange. Fore wing black, with a white speck at middle of cell; a spot at end of it, one beyond the cell, and another on vein 4; a curved series of metallic-blue specks near outer and inner margins; cilia white

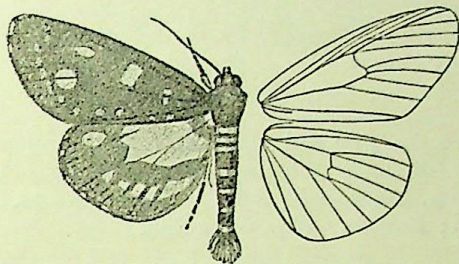



Fig. 101.—*Phalænoides funebris,* ♂. ½.

near apex. Hind wing with the basal area white; the marginal area black, with a white subapical spot and series towards anal angle; cilia spotted with white.

Hab. Sikhim. *Exp.* 58 millim.

Genus ZALISSA.

Zalissa, *Wlk. Cat.* xxxiii, p. 936 (1865).
Seudyra, *Stretch, Cist. Ent.* ii, p. 19 (1875).
Pimprana, *Moore, Lep. Atk.* p. 41 (1882).

Type, *Z. catocalina,* Wlk., from Australia.

Range. Japan; China; Himalayas; N. India; Burma; Andamans; Sumatra; Java; Borneo; Australia.

Palpi with the 3rd joint short; antennæ slightly dilated; abdomen with dorsal tufts; tibiæ moderately hairy and not spined. Fore wing with veins 3, 4, 5 from close to angle of cell; 6 from upper angle; 9 and 10 anastomosing with 7 and 8 to form the areole. Hind wing as in *Chelonomorpha.*

1569. **Zalissa transiens,** *Wlk. Cat.* vii, p. 1588; *Moore, Lep. E. I. Co.* pl. 13, figs. 5, 5 *a* (larva); *C. & S.* no. 340.
Eusemia ægoceroides, *Feld. Reis. Nov.* pl. 107, fig. 10; *Boisd. Rev. Zool.* 1874, p. 106.
Seudyra dissimilis, *Swinh. Trans. Ent. Soc.* 1890, p. 174.

Head and thorax dark chestnut-brown; abdomen golden yellow, with a series of dorsal black spots. Fore wing dark chestnut marbled with grey, this colour forming an oblique band from costa to outer angle; orbicular and reniform outlined in grey. Hind wing yellow, with a broad irregular black margin; some specimens with a black spot on discocellulars.

Some specimens have the costa and cell of fore wing suffused with white.

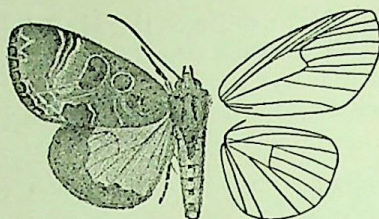



Fig. 102.—*Zalissa transiens*, ♂. ½.

Larva black, the first and eleventh somites yellow with black spots; lateral tufts of blue hairs and scattered long black hairs.
Hab. Sikhim, 2000–4000 feet; Khásis; Nágas, 6000 feet; Burma; Java; Borneo. *Exp.* 50 millim.

1570. **Zalissa bala,** *Moore, P. Z. S.* 1865, p. 795; *C. & S.* no. 343.

Differs from *transiens* in the grey marbling of fore wing being suffused with fuscous. Hind wing with a black spot at end of cell; the marginal band extending more round anal angle and suffused with yellow on the underside.
Hab. Sikhim, 7000–10,000 feet. *Exp.* 50 millim.

1571. **Zalissa venosa,** *Moore, P. Z. S.* 1879, p. 389; *Waterh. Aid,* ii, pl. 131, fig. 5; *C. & S.* no. 341.

♂. Fore wing wholly suffused with grey, except the apical and inner areas. Hind wing with a red-brown patch and submarginal orange line on the marginal band near anal angle; no cell-spot. Underside of both wings with a submarginal lunulate white line.
Hab. Sikhim. *Exp.* 54 millim.

1572. **Zalissa longipennis,** *Wlk. Cat.* xxxiii, p. 934; *Butl. Ill. Het.* v, pl. 82, fig. 8; *C. & S.* no. 339.

♂. Hind wing with some yellow on the margin beyond the black band, which is widest at apex and anal angle. Underside of fore wing with the base yellow; the orbicular, reniform, and a patch below vein 2 black, the two former with white patches beyond them; the apex red-brown; hind wing with the marginal band obsolete and replaced by a reddish submarginal line, with some red suffusion beyond it.
Hab. Sikhim, low elevations; Manipur; Silhet; Nágas. *Exp.* 66 millim.

1573. **Zalissa exiguifascia.**
Phœgorista catocalina, *Wlk. Cat.* xxxv, p. 1859 (præocc.); *Butl. Ill. Het.* v, pl. 82, fig. 9; *C. & S.* no. 338.

Differs from *longipennis* in the fore wings not being so grey.

Hind wing with a spot at end of cell; the submarginal band wide near anal angle, obsolete towards apex. Underside of fore wing yellow, without the white patches; the red at apex less extensive; hind wing with the cell-spot prominent.

Hab. Sikhim, 6000–8000 feet. *Exp.* 65 millim.

1574. **Zalissa albifascia,** *Wlk. Cat.* xxxiii, p. 933; *C. & S.* no. 2275.

Differs from *transiens* in the orbicular and reniform spots of the fore wing being indistinct and not outlined with white; the patch beyond the cell large and sometimes pure white; the postmedial lines evenly curved, not oblique and angled; the marginal area not bluish grey towards anal angle; an indistinct waved submarginal line. Hind wing with the black band broadest at apex; its inner edge evenly curved, with a white patch on it at apex. Underside with the base of fore wing yellow; slight traces of the white patches in cell; white patches at apices of both wings.

Hab. N. China; Sikhim; Canara; Moulmein; Rangoon; Andamans. *Exp.* 60 millim.

*1575. **Zalissa ? nepcha,** *Moore, P. Z. S.* 1867, p. 68; *C. & S.* no. 2278.

Head black; antennæ yellow; thorax rufous brown; abdomen orange-yellow, with dorsal and lateral series of black-brown spots. Fore wing rufous brown; some irregular black marks on basal area; a square white spot at end of cell; a narrow slightly curved postmedial white band with black inner edge and series of dentate black marks beyond it; a marginal series of black and grey lunules; cilia grey-brown. Hind wing orange-yellow, with a broad black marginal band. Underside with the basal area yellow, the outer black; fore wing with a broad postmedial white band to near outer angle, where there is a white spot; hind wing with a white medial patch from costa to lower angle of cell.

Hab. Sikhim. *Exp.* 70 millim.

1576. **Zalissa atkinsoni,** *Moore, Lep. Atk.* p. 42, pl. 2, fig. 11; *C. & S.* no. 1740.

♂. Head and thorax pale brown; abdomen black, yellow at sides and extremity. Fore wing rust-red; the basal and costal areas and a space beyond end of cell ochreous; orbicular and reniform spots indistinctly fuscous; submarginal and marginal series of grey specks. Hind wing black; the marginal area and cilia bright yellow. Underside with the costal and marginal areas of both wings yellow; the discal and inner areas black; two black spots in cell of fore wing, and one in that of hind wing.

Hab. Sikhim. *Exp.* 36 millim.

Genus ÆGOCERA.

Ægocera, *Latr. Gen. Crust. Ins.* iv, p. 211 (1809).

Type, *Æ. menete*, Cram., from Africa.

Range. Æthiopian, Oriental, and Australasian regions.

Palpi with the 2nd joint clothed with long hair; antennæ strongly dilated distally. Venation as in *Zalissa*, except that vein 5 of the hind wing is absent.

SECT. I. Fore wing of male with the subcostal nervures distorted and enclosing below the costa a large hyaline streak, the membrane of which is dilated and ribbed, producing a clicking sound during flight, probably by friction on the greatly-developed spines of the mid tarsus.

1577. **Ægocera tripartita**, *Kirby, Proc. Roy. Dubl. Soc.* ii, 1880, p. 340; *Waterh. Aid*, i, pl. 39; *C. & S.* no. 347.

Palpi black, fringed with white; head white; thorax red-brown, the collar and tegulæ marked with white; abdomen yellow, with a black spot on the vertex of each segment. Fore wing red-brown, thickly irrorated with grey scales; a broad longitudinal streak from the base broken into three spots. Hind wing yellow, with a black spot at the end of cell and a red-brown irregular outer margin; cilia whitish.

Hab. Plains of Burma. *Exp.* 37 millim.

SECT. II. Fore wing of male without the costal vesicle.

1578. **Ægocera venulia**, *Cram. Pap. Exot.* ii, pl. 165 D; *C. & S.* no. 348.

Fore wing with the longitudinal white streak entire, and with

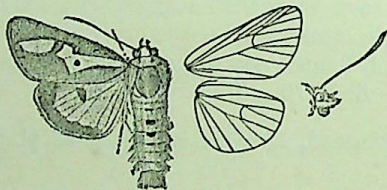



Fig. 103.—*Ægocera venulia*, ♂. ¾.

an indenture on its upper edge and a small black spot near its lower edge; a red marginal line; cilia of both wings white.

Hab. The sub-Himalayan tracts of Kashmir and Sikhim, and plains of India, Ceylon, and Burma. *Exp.* 33 millim.

1579. **Ægocera bimacula**, *Wlk. Cat.* i, p. 57; *Butl. Ill. Het.* i, pl. 5, fig. 4; *C. & S.* no. 345.

Fore wing not so much irrorated with grey; a yellowish-white streak from the base expanding into a large spot in the cell and interspace below, and connected by a bar with a medial band from below the costa to the interno-median interspace (in Ceylon and S.-Indian specimens these spots are generally disconnected); a

postmedial band from the costa to vein 3. Hind wing with a spot at each angle of the cell; the lower spot sometimes joined to the marginal band at anal angle.

Hab. The plains of India and Ceylon; Sikhim. *Exp.* 45 millim.

1580. **Ægocera accurata,** *Swinh. P. Z. S.* 1889, p. 401.

Frons and thorax orange; abdomen with orange patches on the terminal segments. Fore wing black, with a white subbasal dot; an antemedial spot; a flask-shaped medial band from below the costa to above vein 1; a postmedial broader band from below the costa to vein 3, with its outer edge angled; cilia white at apex. Hind wing black, with a large round central white spot; cilia white.

Hab. Burma. *Exp.* 53 millim.

Genus MIMEUSEMIA.

Mimeusemia, *Butl. A. M. N. H.* (4) xv, p. 397 (1875).

Type, *M. persimilis*, Butl., from Japan.

Range. Japan; India; Ceylon; Burma.

Differs from *Ægocera* in veins 9 and 10 of the fore wing both anastomosing with 7 and 8 to form the areole, and in the male claspers being large as in *Eusemia*.

1581. **Mimeusemia basalis,** *Wlk. Cat.* i, p. 53; *Butl. Ill. Het.* i, pl. 5, fig. 2; *C. & S.* no. 314.

Head and thorax black; abdomen black, the terminal segments ringed with orange. Fore wing black with a chestnut tinge, and crossed by four indistinct lines of metallic-blue scales; a large subbasal yellow spot; a postmedial yellow band from the costa to interno-median interspace, excurved beyond the cell. Hind wing with a subbasal orange patch on the inner margin; a yellow spot at the end of cell.

Hab. Assam; Bengal. *Exp.* 58 millim.

1582. **Mimeusemia peshwa,** *Moore, Cat. E. I. Co.* p. 289, pl. 7 *a*, fig. 2; *C. & S.* no. 328.

Vertex of head, thorax, and patagia yellow; the whole abdomen ringed black and orange. Fore wing with a smaller yellow spot at base of cell; a large spot at lower angle of cell; a postmedial oblique spot from veins 9 to 3; cilia white at apex and outer angle. Hind wing with a large basal golden-yellow patch extending along the inner margin to near the anal angle; a large yellow spot beyond the cell from veins 7 to 3; cilia with the tips white at apex.

Hab. Kángra; Sikhim. *Exp.* 58 millim.

1583. **Mimeusemia ceylonica**, *Hmpsn. Ill. Het.* ix, p. 89, pl. 157, fig. 24.

Differs from *peshwa* in the vertex of thorax being black; abdo-

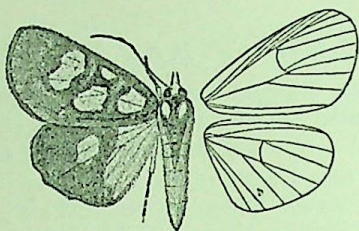



Fig. 104.—*Mimeusemia ceylonica*, ♂. 1/1.

men orange, with the basal segments black above; the fore wing with a small yellow spot at the upper angle of the cell.

Hab. Trincomali, Ceylon. *Exp.* 41 millim.

1584. **Mimeusemia albicilia**, n. sp.

The markings of the head, thorax, and wings as in *peshwa*, except that the spots of the fore wing are larger and whiter; the cilia of hind wing wholly white; abdomen as in *ceylonica*.

Hab. Tilin, Yaw, Burma (*Watson*). *Exp.*, ♂ 48, ♀ 55 millim. Type in B. M.

Species formerly recorded as Indian which are omitted.

Vithora indrasana, Moore, C. & S. no. 344, is a Geometer.

Ægocera fimbria, Motsch., C. & S. no. 346 = *Æ. fervida*, Wlk., from Africa.

Family NOCTUIDÆ.

A large family of moths consisting of closely allied subfamilies and genera; all are of completely nocturnal habits, except the *Deltoidinæ*, which frequent low herbage. The neuration is extremely constant, so that it is only necessary to describe it when it varies from the normal type, which is: Fore wing with vein 1 *a* slight and not anastomosing with 1 *b*; 1 *c* absent; 2 from middle of cell; 3, 4, 5 from close to lower angle; 6 from upper angle; 8 given off from 7 and anastomosing with 9, which is given off from 10 to form an areole; 11 from cell; 12 long. Hind wing with 1 *a* and *b* present; 1 *c* absent; 2 from middle of cell; 3 and 4 from lower angle; 5 from near lower angle or middle of discocellulars, rarely absent, but more or less aborted in the *Acontiinæ* and *Trifinæ*. Frenulum always, proboscis almost always, present.

Larvæ usually naked or slightly clothed with hair, rarely with thick tufts or spatulate filaments. The lowest forms, the *Sarrothripinæ*, *Stictopterinæ*, *Trifinæ*, *Palindiinæ*, *Euteliinæ*, and almost all *Gonopterinæ*, have the four pairs of abdominal prolegs fully developed and are not semilooping, whilst in the *Deltoidinæ* and *Acontiinæ* the first or first two pairs are sometimes obsolescent or absent; in the *Quadrifinæ* and *Focillinæ*, which are semiloopers, the first or first two pairs are almost always rudimentary or absent. The larvæ usually pupate in the earth without a cocoon, a cemented chamber being often formed; more rarely a cocoon is made amongst leaves, on bark, or on the surface of ground.

Key to the Subfamilies.

A. Moths with the legs and especially the tarsal joints short and stout.
  a. Hind wing with vein 5 obsolescent, from centre of discocellulars or (rarely) depressed at origin; no production of the outer margin at its termination . . 1. *Trifinæ*.
  b. Hind wing with vein 5 slightly more developed and always depressed at origin; no production of the outer margin at its termination . . . . 2. *Acontiinæ*.
  c. Hind wing with vein 5 as strong as the other veins *, with a projection of the outer margin at its termination and almost always from or from near lower angle of cell or well below centre of discocellulars.
    a'. Palpi not sickle-shaped, the 2nd joint being straight.
      a^2. Abdomen much longer than the hind wing.
        a^3. Abdomen without a large tubular anal tuft or paired tufts, stout, and with smooth scaling. 7. *Gonopterinæ*.
        b^3. Abdomen with a large tubular anal tuft or paired tufts . . . . 5. *Euteliinæ*.
      b^2. Abdomen hardly longer than the hind wing † and tapering to extremity.
        a^3. Fore wing almost always with raised tufts or lines of scales.
          a^4. Fore wing of nearly even width after the base . . . . . . 4. *Sarrothripinæ*.

* Absent in a few *Sarrothripinæ*.
† Except in *Batracharta*, *Sphingomorpha*, and *Lontha*.

b^4. Fore wing increasing in width to outer margin, usually narrow and long; hind wing generally more or less hyaline at base ...... 6. *Stictopterinæ.*

b^3. Fore wing without raised tufts or lines of scales, increasing in width to outer margin*, and not hyaline at base.

a^4. Palpi slender, with the 2nd joint not thickened; the scaling quite smooth...... 3. *Palindiinæ.*

b^4. Palpi with the 2nd joint more or less thickened; the scaling usually hairy .. 8. *Quadrifinæ.*

b'. Palpi sickle-shaped, the 2nd joint being curved .... 9. *Focillinæ.*

B. Moths of slender build, with the legs and especially the tarsal joints long and slender .... 10. *Deltoidinæ.*

Subfamily TRIFINÆ.

Fore wing with vein 6 from the upper angle of cell or rarely from above it; vein 8 given off from 7 and anastomosing with 9, which is given off from 10 to form the areole †, or rarely vein 7 also anastomoses with 9. Hind wing with veins 3 and 4 from

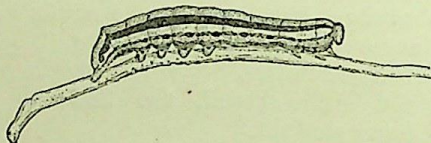



Fig. 105.—Larva of *Agrotis c-nigrum*. $\frac{1}{1}$.
(From Hmpsn. Ill. Het. ix, pl. 176, fig. 4.)

end of cell or rarely on a short stalk; 5 from centre of discocellulars, rarely slightly curved at origin, very slender and obsolescent, the outer margin not being produced at its termination ‡; veins 6 and 7 from angle of cell or rarely stalked.

The following markings on the fore wing are very characteristic of the *Noctuidæ* and especially of the subfamily *Trifinæ*: an orbicular or rounded stigma in the cell, a reniform or kidney-shaped stigma just beyond it, and a claviform or elongate streak below the cell.

Larvæ with four pairs of abdominal prolegs, not semilooping.

---

* Except *Isoeura*, *Dinumma*, and *Callyna*.

† Except in *Arboricornus*.

‡ In *Acutipenna* vein 5 is more strongly developed and from near the lower angle of cell.

Key to the Genera.

A. Eyes hairy.
- *a*. Proboscis very slender ... 2. GLOTTULA, p. 167.
- *b*. Proboscis fully developed.
  - *a'*. Abdomen without dorsal tufts.
    - a^2. Palpi porrect, very short and hairy ... 3. POLYTELA, p. 168.
    - b^2. Palpi obliquely upturned and smoothly scaled.
      - a^3. Fore wing with non-crenulate cilia ... 44. LEUCANIA, p. 269.
      - b^3. Fore wing with crenulate cilia ... 46. ARCILASISA, p. 282.
    - c^2. Palpi porrect, long, and the 2nd joint clothed with long hair ... 19. SEMIOPHORA, p. 205.
  - *b'*. Abdomen with dorsal tufts ... 18. HADENA, p. 198.

B. Eyes naked.
- *a*. Proboscis quite obsolete; frons with a corneous process ... 4. RABILA, p. 169.
- *b*. Proboscis fully developed.
  - *a'*. Hind wing with vein 8 running close along 7 to middle of cell ... 1. SPHETTA, p. 166.
  - *b'*. Hind wing with vein 8 rapidly diverging from 7.
    - a^2. Fore tibiæ with a pair of strong curved terminal spines.
      - a^3. Mid and hind tibiæ without spines ... 10. CHARICLEA, p. 176.
      - b^3. Mid and hind tibiæ spined ... 11. RAGHUVA, p. 180.
    - b^2. Fore tibiæ without strong curved spines.
      - a^3. Mid and hind tibiæ spined.
        - a^4. Fore tibiæ with a pair of slender terminal spines ... 9. HELIOTHIS, p. 174.
        - b^4. Fore tibiæ strongly spined at margins.
          - a^5. Fore wing broad; abdomen flattened ... 12. AGROTIS, p. 180.
          - b^5. Fore wing long and narrow ... 17. HERMONASSA, p. 196.
        - c^4. Fore tibiæ without spines.
          - a^5. Mid and hind tibiæ with a few spines towards extremities ... 8. ADISURA, p. 173.
          - b^5. Mid and hind tibiæ strongly spined.
            - a^6. Fore wing narrow, the apex subquadrate ... 14. EPILECTA, p. 193.
            - b^6. Fore wing broad, the apex more produced, and outer margin oblique ... 16. HYPERNÆNIA, p. 194.
          - c^5. Mid and hind tibiæ without spines.
            - a^6. Abdomen with dorsal tufts.
              - a^7. Collar with a high peak at centre ... 28. CUCULIA, p. 238.
              - b^7. Collar normal; thorax with a large furrowed crest.
                - a^8. Palpi with the 3rd joint short and upturned ... 26. DIPTERYGIA, p. 235.
                - b^8. Palpi with the 3rd joint long and porrect ... 27. EUSCOTIA, p. 237.

c^7. Thorax with a slight tuft behind the collar and paired tufts on metathorax.
a^8. Palpi porrect .... 47. AUCHMIS *, p. 283.
b^8. Palpi upturned.
a^9. Palpi with the 2nd joint not reaching vertex of head, the 3rd short .... 21. EUPLEXIA, p. 207.
b^9. Palpi with the 2nd joint reaching vertex of head, the 3rd long .... 22. ANCARA, p. 223.
d^7. Thorax without tufts behind the collar and only the metathoracic tufts.
a^8. Fore tibiæ with large tufts of hair.
a^9. Fore wing with no tuft of scales at outer angle ...... 35. SPODOPTERA, p. 248.
b^9. Fore wing with a tuft of scales at outer angle.
a^{10}. Hind wing with the outer margin slightly excised below apex .... 39. CALLOPISTRIA, p. 253.
b^{10}. Hind wing with the outer margin evenly curved .... 40. ELUSA, p. 257.
b^8. Fore tibiæ smoothly scaled.
a^9. Hind wing with the discocellulars nearly straight.... 34. PRODENIA, p. 247.
b^9. Hind wing with the discocellulars highly angled .... 36. CALOGRAMMA, p. 249.
e^7. Thorax without tufts.
a^8. Fore wing long and narrow .. 23. MAGUSA, p. 226.
b^8. Fore wing short and quadrate.
a^9. Fore wing with veins 8 and 9 anastomosing to form an areole .... 38. BERRESA, p. 252.
b^9. Fore wing with veins 7, 8, 9, 10 stalked................ 41. ARBORICORNUS, p. 258.
c^8. Fore wing short, but more produced at apex.............. 37. AMYNA, p. 250.
b^6. Abdomen without dorsal tufts.
a^7. Frons with a trilobate corneous process .... 31. MUDARIA, p. 245.
b^7. Frons without a corneous process.
a^8. Thorax with a high sharp crest behind the collar.
a^9. Fore wing with the cilia slightly crenulate; the palpi short .... 5. XANTHIA, p. 170.
b^9. Fore wing with the cilia produced to points at the veins; the palpi very long .... 6. ELWESIA, p. 171.

* In *A. polyodon* there are sometimes a few spines at the end of the mid tibia.

b^8. Thorax with a long sharp crest behind the collar .... 7. PYRRHIA, p. 172.

c^8. Thorax with a slight furrowed crest behind the collar and a pair of tufts on metathorax; fore wing with the cilia crenulate .... 24. EUROIS, p. 227.

d^8. Thorax with a slight crest behind the collar, and no tufts on metathorax; fore wing with the cilia non-crenulate . 32. TOXOCAMPA, p. 245.

e^8. Thorax with no crest behind the collar, and slight tufts on metathorax; the cilia non-crenulate .... 33. CONSERVULA, p. 246.

f^8. Thorax without tufts or crests.

a^9. Palpi upturned.

a^{10}. Fore wing with the cilia crenulate.

a^{11}. Palpi with the 2nd joint not reaching vertex of head; the head and thorax clothed with long hair.................. 25. POLIA, p. 231.

b^{11}. Palpi with the 2nd joint reaching vertex of head; the head and abdomen smooth; abdomen flattened .... 13. AMPHIPYRA, p. 190.

b^{10}. Fore wing the cilia non-crenulate.

a^{11}. Palpi with the 2nd joint quite smoothly scaled.

a^{12}. Palpi with the 2nd joint reaching just above vertex of head.

a^{13}. Palpi with the 3rd joint short .... 15. AUCHA, p. 193.

b^{13}. Palpi with the 3rd joint long, recurved over head and buried in hair in male, upturned in female; male with very long tubular anal tuft . 30. CORYTHURUS, p. 244

b^{12}. Palpi with the 2nd joint not quite reaching vertex of head.

a^{13}. Antennæ ciliated in both sexes .... 45. FLOCCIFERA, p. 281

b^{13}. Antennæ quite simple.

a^{14}. Palpi with the 2nd joint not thickened; fore wing of normal shape.............. 53. LEOCYMA, p. 288.

b^{14}. Palpi with the 2nd joint thickened; fore wing with the inner

and outer margins forming an almost continuous curve .... 54. APSARASA, p. 290.

b^{11}. Palpi with the 2nd joint fringed with hair.

a^{12}. Fore wing with the inner margin slightly lobed towards base.......... 29. ACRONYCTA, p. 240.

b^{12}. Fore wing with the inner margin almost straight.

a^{13}. Fore wing short and broad .... 42. CARADRINA, p. 259.

b^{13}. Fore wing long and narrow, the apex produced .... 20. BOMBYCIA, p. 206.

c^{11}. Palpi with a tuft of hair on 2nd joint produced to an acute angle .... 43. TATHORHYNCHUS, [p. 268.

b^{9}. Palpi porrect.

a^{10}. Fore wing with the costa arched; vein 6 given off after angle of cell; antennæ of male bipectinate ...... 52. PHYCIDOPSIS, p. 288.

b^{10}. Fore wing with the costa nearly straight; vein 6 from angle of cell; antennæ of male ciliated.

a^{11}. Fore wing not produced at apex.

a^{12}. Fore wing of moderate breadth; the apex acute. 48. NONAGRIA, p. 284.

b^{12}. Fore wing very narrow, the apex rounded...... 51. PHYCIDIMORPHA, [p. 287.

b^{11}. Fore wing with the apex produced to a point.

a^{12}. Fore wing of normal breadth; vein 7 from end of areole .... 49. ACRAPEX, p. 286.

b^{12}. Fore wing very narrow; vein 7 anastomosing with 9 .... 50. ACUTIPENNA, p. 287.

Genus SPHETTA.

Sphetta, *Wlk. Cat.* xxxii, p. 457 (1865).

Type, *S. apicalis*, Wlk.

Range. Sikkim; Malabar Coast; Ceylon.

Eyes naked; palpi obliquely porrect, reaching beyond the frons, the 2nd joint heavily fringed with hair; antennæ fasciculate; thorax and abdomen smoothly scaled, the latter long; tibiæ without spines. Fore wing broad and rounded; vein 3 from long before end of cell. Hind wing with veins 6 and 7 on a short stalk; 8 running close along 7 to middle of cell.

This may be an abnormal *Notodont* genus allied to *Cyphanta*.

1585. **Sphetta apicalis**, *Wlk. Cat.* xxxii, p. 457; *Moore, Lep. Ceyl.* ii, pl. 121, figs. 2, 2 *a* (larva); *C. & S.* no. 1139.
Sphetta biocellata, *Moore, P. Z. S.* 1879, p. 405; *C. & S.* no. 1140.

♂. Head, thorax, and fore wing pale wainscot-brown, the last with traces of waved dark lines at the base; a double angulate antemedial line; a black streak from the middle of the cell to apex, before reaching which it is curved upwards, leaving a large pale

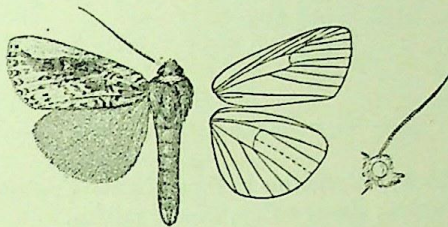



Fig. 106.—*Sphetta apicalis*, ♂. 1.

patch on the costa before the apex; the orbicular and reniform spots small and pale; four waved postmedial lines and one waved submarginal. Abdomen and hind wing fuscous.

♀. Browner and darker.

Larva greyish blue above, green below, with a darker lateral band dividing the two colours; a dorsal series of setiferous tubercles from the 4th to anal somite; a subdorsal series of small black spots.

Hab. Sikhim; Bombay; Nilgiris; Ceylon. *Exp.*, ♂ 42, ♀ 50 millim.

Genus GLOTTULA.

Glottula, *Guen. Ann. Soc. Ent. France*, vi, p. 359 (1837).

Type, *G. pancratii*, Cyr., from Europe.

Range. Europe; S. Africa; Mauritius; throughout India, Burma, and Ceylon; Java.

Eyes minutely pubescent; proboscis almost obsolete; palpi porrect and short; antennæ serrate in both sexes; thorax and abdomen without tufts, the former with erect woolly pile.

1586. **Glottula dominica**, *Cram. Pap. Exot.* iv, pl. 399 H; *Moore, Lep. Ceyl.* iii, pl. 145, figs. 2, 2 *a* (larva); *C. & S.* no. 1780.

Head and thorax black-brown; abdomen red-brown. Fore wing red-brown, palest beyond the middle; subbasal, medial, and post-medial indistinct waved black lines; the reniform ochreous; a curved submarginal ochreous line with ferruginous lunules on each side of it; a marginal series of black lunules. Hind wing pure white.

Larva. Thick and warty; black, spotted with bluish white; the head, a dorsal patch on 1st somite and two terminal somites red with black spots; legs red and black.

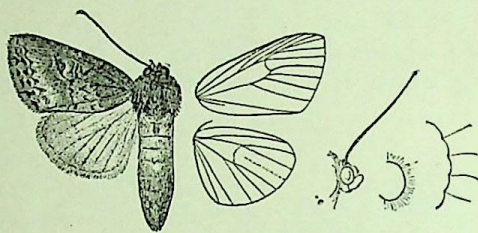



Fig. 107.—*Glottula dominica*, ♂. 1/1.

Hab. S. Africa; Mauritius; throughout Continental India, Ceylon, and Burma; Java. *Exp.* 36–38 millim.

1587. **Glottula orientalis**, n. sp.

♂. Head, thorax, and abdomen black-brown; the basal joint of antennæ yellow; some yellow on tegulæ. Fore wing pale pink; some irregular black marks on base of costa and inner margin; a broken antemedial waved band; the reniform orange with black outline, and a black patch on the costa above it; a lunulate postmedial line excurved and obsolescent from the costa to vein 3, well marked towards inner margin; the outer area black, with an irregular series of pink striæ. Hind wing dark fuscous, the discal area suffused with white, and with a lunule at end of cell; cilia of both wings orange and black; underside whitish with a cell-spot, traces of a postmedial line, and broad marginal band.

Hab. Nilgiris. *Exp.* 38 millim. Type in coll. Moore.

Genus POLYTELA.

Polytela, *Guen. Noct.* i, p. 113 (1852).

Type, *P. gloriosæ*, Fabr.

Range. Throughout India and Ceylon; Java.

Eyes hairy; proboscis fully developed; palpi porrect and roughly scaled, the 3rd joint short; antennæ almost simple. Thorax and abdomen without tufts; tibiæ without spines.

1588. **Polytela gloriosæ**, *Fabr. Sp. Ins.* ii, p. 205, no. 150; *Moore, Lep. Ceyl.* iii, p. 145, figs. 1, 1 *a* (larva); *C. & S.* no. 1786.

Head and thorax blue-black; the basal joint of palpi and antennæ orange; three orange specks on metathorax; abdomen black, the terminal segments orange. Fore wing blue-black; an

orange speck at base; the subbasal and antemedial waved lines filled in with orange, with an orange speck between them in cell, and two pink and black lunules towards inner margin; the orbicular a yellow ring-mark; the reniform yellow, with the upper part centred with pink, the lower with fuscous; some orange specks on costa towards apex; the curved lunulate double postmedial line filled in with yellow, and with a series of pink and black lunules beyond it; large orange blotches at apex and outer angle; cilia black and orange. Hind wing fuscous, with traces of an angled postmedial line; the cilia orange.

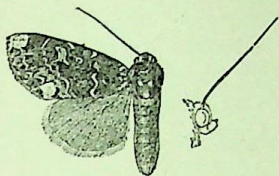



Fig. 108.—*Polytela gloriosæ* ♂. ½.

Larva smooth; purple-black, with dorsal, lateral, and sublateral series of white spots; purplish lateral blotches on thoracic and two terminal somites; head, legs, and a dorsal spot on 1st somite red. Food-plant *Amaryllis*.

Hab. Throughout India and Ceylon. *Exp.* 28–42 millim.

1589. **Polytela florigera,** *Guen. Noct.* i, p. 114; *C. & S.* no. 1785.
Polytela inclyta, *Wlk. Char. undescr. Het.* p. 27.

Differs from *gloriosa* in the basal joints of the palpi and antennæ being black; the orange spots on metathorax often absent; cilia of hind wing black.

Hab. Madras; Canara. *Exp.* 28 millim.

1590. **Polytela chrysospila,** *Wlk. Cat.* xxxii, p. 635.

Head, thorax, and abdomen black, the last with the extremity orange. Fore wing with the basal two-thirds black, with blue-black patches on it; a large yellow patch at end of cell; the outer area blue-black. Hind wing black.

Hab. Karen Hills; Java. *Exp.* 30 millim.

Genus **RABILA.**

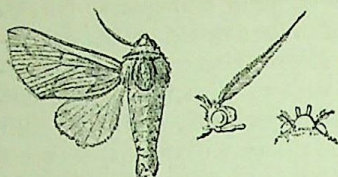
Rabila, *Wlk. Cat.* xxxii, p. 507 (1865).

Type, *R. frontalis*, Wlk.

Range. Ceylon.

Eyes naked without lashes; proboscis obsolete; palpi porrect and evenly scaled, the 3rd joint long; frons with a rounded corneous projection; antennæ of male with short branches. Thorax and abdomen without tufts; tibiæ without spines. Neuration normal; fore wing with the apex somewhat produced and rounded, the outer angle slightly hooked.

1591. **Rabila frontalis,** *Wlk. Cat.* xxxii, p. 508; *Moore, Lep. Ceyl.* ii, pl. 132, fig. 5; *C. & S.* no. 1300.

Fig. 109.—*Rabila frontalis,* ♂. ½.

♂. Reddish ochreous; fore wing with the veins and interspaces slightly streaked with red-brown. Hind wing white.

Type very faded.

Hab. Ceylon. *Exp.* 34 millim.

Genus XANTHIA.

Xanthia, *Ochs. Eur. Schmett.* iv, p. 82 (1816).

Type, *X. luteago*, Fabr., from Europe.

Range. Europe; Amur; Himalayas; Khási Hills.

Eyes naked and without lashes; proboscis fully developed; palpi porrect or obliquely upturned; antennæ of male ciliated; thorax squarely scaled, with a high sharp crest behind the collar; abdomen without dorsal tufts, and clothed with long hair on the back of proximal segments; tibiæ without spines. Fore wing rather acute at apex; the outer margin excurved at centre; the cilia slightly crenulate.

1592. **Xanthia albosignata,** *Moore, P. Z. S.* 1881, p. 355; *C. & S.* no. 1977.

♂. Whitish, suffused with pale red-brown, the abdomen with fuscous. Fore wing with whitish subbasal and antemedial lines, the latter oblique; orbicular and reniform ochreous with chestnut outline, the latter with four white specks on its outer edge; a

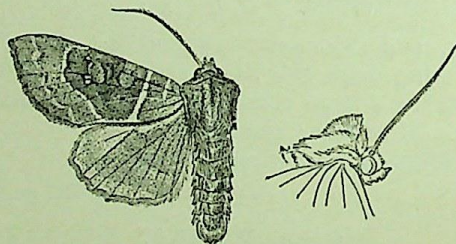



Fig. 110.—*Xanthia albosignata,* ♂. ½.

postmedial whitish line excurved beyond cell, the area beyond it suffused with ochreous, with an indistinct submarginal chestnut line; cilia fuscous. Hind wing whitish, the inner area suffused with fuscous; traces of a postmedial line. Underside with postmedial line to both wings and cell-spot to hind wing.

Hab. N.W. Himalayas. *Exp.* 56 millim.

1593. **Xanthia melonina,** *Butl. Ill. Het.* vii, p. 57, pl. 128, fig. 7.

Orange-yellow; collar and patagia with purplish lines on them; abdomen tinged with pink. Fore wing with the veins purplish;

two subbasal purplish lines, the second arising from a patch on the costa; two antemedial lines slightly angled inwards on median nervure; a medial diffused band; the orbicular and reniform large, with purplish edges; the postmedial line angled below the costa and at lower angle of cell; a dark submarginal nearly straight line; a marginal crenulate line. Hind wing pale, with a medial pink line from upper angle of cell to inner margin; a submarginal pink diffused band; the inner area suffused with pink; a crenulate marginal line. Underside of fore wing with two postmedial lines. Hind wing with cell-spot and postmedial line.

Hab. Dharmsála. *Exp.* 44 millim.

1594. **Xanthia basalipunctata,** *Graeser, Berl. ent. Zeit.* 1888, p. 341.
Gortyna intermixta, *Swinh. Trans. Ent. Soc.* 1891, p. 480, pl. 19, fig. 11.

♂. Ochreous, suffused with ferruginous. Fore wing with the costa narrowly red-brown; double waved subbasal and antemedial lines, the latter with a red-brown patch in cell and another on inner margin; orbicular, reniform, and claviform with red-brown outlines; curved medial and postmedial lines, the latter with the whole area beyond it red-brown, except an apical yellow patch; an indistinct, waved, submarginal line. Hind wing fuscous, with an indistinct postmedial line.

Hab. Amur; Khásis. *Exp.* 42 millim.

1595. **Xanthia gilvago,** *Esp. Schmett. Eur.* pl. 176, fig. 2.
Noctua palleago, *Hübn. Samml. Eur. Schmett., Noct.* fig. 442.

Head and thorax orange-yellow; abdomen whitish. Fore wing orange-yellow, slightly suffused with rufous; indistinct rufous waved subbasal, antemedial, and postmedial lines, and antemedial, medial, and postmedial lunulate fuscous bands; the orbicular and reniform indistinct, the latter with a dark spot on its lower part; a submarginal series of dark specks, with faint fuscous marks beyond them; the cilia reddish. Hind wing yellowish white.

Hab. Europe; Gurais Valley, Kashmir. *Exp.* 38 millim.

1596. **Xanthia rectilineata,** n. sp.

Pale reddish. Fore wing with nearly straight subbasal, antemedial, and postmedial pale lines with dark edges, some fuscous suffusion before the antemedial and beyond the postmedial line; a diffused fuscous medial band, the reniform fuscous and large; some fuscous on outer margin. Hind wing pale.

Hab. Kulu (Hocking); Sultanpur, Kángra. *Exp.* 32 millim. Type in B. M.

Genus **ELWESIA**, nov.

Type, *E. diplostigma*, Hmpsn.
Range. Sikhim.
Differs from *Xanthia* in the eyes being heavily lashed; palpi

with the 2nd joint reaching above vertex of head, the 3rd long and porrect; a large porrectly pointed tuft of hair on vertex of head; thorax with the sharp crest behind the collar very long. Fore wing with the cilia produced to long points at the veins; hind wing with the cilia deeply crenulate.

1597. **Elwesia diplostigma**, n. sp.

♀. Bright chestnut. Fore wing with short subbasal and straight antemedial ochreous dark-edged lines; the orbicular, reniform, and claviform very large with ochreous outlines, the reniform with a round fuscous ochreous-edged spot at centre; the postmedial line

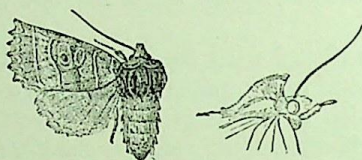



Fig. 111.—*Elwesia diplostigma*, ♀. $\frac{1}{1}$.

slightly excurved beyond cell, with a double series of dark specks on the veins beyond it; the submarginal line almost straight; a slight crenulate marginal line. Hind wing reddish fuscous; the outer margin and cilia tinged with ochreous.

Hab. Sikhim, 10,000 feet (*Elwes*). *Exp.* 34 millim. Type in coll. Elwes.

Genus PYRRHIA.

Pyrrhia, *Hübn. Verz.* p. 233 (1818).

Type, *P. purpurites*, Treitschke, from Europe.

Range. Europe; Amur; Japan; Himalayas; Nága Hills.

Eyes naked; proboscis fully developed; palpi porrect, thickly and evenly scaled, the 3rd joint very short; no frontal tuft. Thorax with a long sharp crest behind collar; abdomen without tufts; mid and hind tibiæ without spines.

SECT. I. Male with antennæ ciliated; eyes without lashes.

1598. **Pyrrhia umbra**, *Hüfn. Berl. Mag.* iii, 294.
Noctua marginata, *Fabr. Syst. Ent.* 610; *Kleem. Beitr.* ii, pl. 7, figs. 6, 8; *C. & S.* no. 1753.
Noctua rutilago, *Schiff. Wien. Verz.* 86, 4.
Noctua umbrago, *Esp. Schmett.* iv, pl. 185, figs. 7, 8.
Noctua conspicua, *Bork. Eur. Schmett.* iv, p. 123, no. 50.
Noctua marginago, *Haw. Lep. Brit.* p. 235, no. 217.

Head, thorax, and fore wing brownish yellow, the last with a

chestnut subbasal line; antemedial, medial, and postmedial curved lines which approach each other at inner margin, the first angled below the cell, the second on median nervure; orbicular and reniform stigmata outlined with chestnut; the area beyond the postmedial line suffused with vinous; a lunulate submarginal line. Abdomen and hind wing ochreous, the latter with a fuscous lunule at end of cell and broad marginal band; the margin rufous. Underside with cell-spot on each wing, that on fore wing large; a postmedial line with fuscous and rufous beyond it.

Fig. 112.—*Pyrrhia umbra*, ♂. $\frac{1}{1}$.

Hab. Europe; Amur; Japan; N.W. Himalayas; Nágas. *Exp.* 40 millim.

SECT. II. Male with antennæ fasciculated; eyes with lashes.

1599. **Pyrrhia cuprea,** *Moore, P. Z. S.* 1867, p. 50, pl. 6, fig. 8; *C. & S.* no. 2149.

♂. Head and thorax purplish red-brown; abdomen fuscous, the extremity fulvous. Fore wing orange, suffused with purplish red-brown; indistinct double-waved subbasal and antemedial red lines; the orbicular and reniform orange irrorated and outlined with red; the claviform with red outline; the postmedial line dark and slightly curved; a submarginal dentate yellow line. Hind wing fuscous brown, the costal area paler; cilia rufous. Underside rufous, with traces of a postmedial line to both wings.

One hind tibia has a single spine in accordance with its Heliothid affinities.

Hab. Sikhim. *Exp.* 40 millim.

Genus ADISURA.

Adisura, *Moore, P. Z. S.* 1881, p. 367.

Type, *A. atkinsoni*, Moore.

Range. Sikhim, Assam Hills, and throughout Peninsular India and Ceylon.

Differs from *Pyrrhia* in having the mid and hind tibiæ sparsely spined; thorax without the sharp crest.

1600. **Adisura atkinsoni,** *Moore, P. Z. S.* 1881, p. 368, pl. 37, fig. 6; *C. & S.* no. 1745.
Adisura leucanioides, *Moore, P. Z. S.* 1881, p. 368; *C. & S.* no. 1747.
Adisura pallida, *Moore, P. Z. S.* 1881, p. 369; *id. Lep. Ceyl.* iii, pl. 150, fig. 8; *C. & S.* no. 1749.

Head, thorax, and fore wing brownish ochreous, the last with a greyish tinge, the costal and outer areas pinkish; the orbicular and reniform stigmata represented by indistinct dark patches; an indistinct postmedial series of specks. Abdomen and hind wing straw-yellow, the latter with the outer area more or less broadly and completely suffused with fuscous. Underside usually with the reniform prominently black.

Fig. 113.
Adisura atkinsoni, ♂. ½.

Hab. Sikhim; Nágas; Karáchi and throughout the Bombay and Madras Presidencies; Ceylon. *Exp.* 31 millim.

Genus **HELIOTHIS.**

Heliothis, *Ochs. Eur. Schmett.* iv, p. 91 (1816).
Heliocheilus, *Grote, Proc. Ent. Soc. Phil.* iv, 1865, p. 328.

Type, *H. dipsacea*, Linn., from Europe.
Range. Universally distributed.

Eyes naked and without lashes; proboscis fully developed; palpi porrect, the 2nd joint evenly clothed with long hair, the 3rd short and depressed; a short frontal tuft. Thorax and abdomen without tufts; fore tibiæ with a pair of slender terminal spines; mid and hind tibiæ spined. Fore wing with veins 8 and 9 sometimes given off from the end of the areole.

SECT. I. (*Heliothis*). Males without hyaline patches on the fore wing and distortion of the nervures.

1601. **Heliothis armigera**, *Hübn. Samml. Eur. Schmett. Noct.* ii, pl. 79, fig. 370; *C. & S.* no. 1730; *Hmpsn. Ill. Het.* ix, pl. 176, fig. 22 (larva); *Moore, Lep. Ceyl.* iii, pl. 150, figs. 1, 1 *a* (larva).
Heliothis pulverosa, *Wlk. Cat.* xi, p. 688.
Heliothis conferta, *Wlk. Cat.* xi, p. 690.
Heliothis succinea, *Moore, P. Z. S.* 1881, p. 362; *C. & S.* no. 1738.
Heliothis rubrescens, *C. & S.* no. 1736 (*nec Wlk.*).

Ochreous with a pale brown, olive, or red-brown tinge. Fore

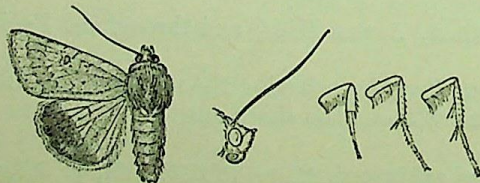



Fig. 114.—*Heliothis armigera*, ♂. ½.

wing with indistinct double waved antemedial lines; a dark speck representing the orbicular; an indistinct curved medial line; the

reniform indistinct; postmedial and submarginal waved lines, the space between them somewhat darker and with a series of pale or dark specks on the nervules; a marginal series of dark specks. Hind wing white; the veins fuscous; a broad blackish outer border usually with a pale submarginal central patch. Underside of fore wing with the orbicular and reniform stigmata conspicuously black; a broad blackish band beyond the postmedial line; the apices of both wings and outer area of fore wing pinkish.

Larva. Dorsal area pale brown; a lateral whitish band; ventral area pale green; each segment with some black specks; head red-brown. Or green with a dark dorsal and two yellow lateral lines; the thoracic somites speckled brown and black, 5th to 10th somites with lateral brown blotches, anal somite with an irregular black dorsal mark. Feeds on rose-buds.

Hab. Universally distributed. *Exp.* 31–41 millim.

1602. **Heliothis peltigera**, *Schiff. Wien. Verz.* 89, 2; *C. & S.* no. 1734; *Boisd. Chen. Helioth.* pl. ii, fig. 1 (larva).
Noctua barbara, *Fabr. Ent. Syst.* iii, 2, p. 111, no. 334.
Noctua florentina, *Esp. Schmett.* iv, pl. 135, fig. 2.
Noctua scutigera, *Borkh. Schmett. Eur.* iv, p. 93, no. 37.
Noctua straminea, *Donov. Brit. Ins.* ii, pl. 61.
Phalæna alphea, *Cram. Pap. Exot.* iii, pl. 250 F.
Phalæna charmione, *Stoll, Cram. Pap. Exot.* v, p. 162, pl. 36, fig. 10.

Differs from *armigera* in being always ochreous. Fore wing with reddish-brown patches on the costa, one small and antemedial, one above the reniform which is prominent and with grey centre, the other at the postmedial band. Underside with the reniform prominent and black, but the orbicular obsolete.

Larva bright green, with darker green and fuscous short streaks and blotches and white lateral line.

Hab. Europe; Teneriffe; S. Africa; Persia; N.W. India, as far south as Poona; New Zealand. *Exp.* 40 millim.

1603. **Heliothis nubigera**, *Herr.-Schäffer, Eur. Schmett.* ii, p. 366.
Heliothis perigeoides, *Moore, P. Z. S.* 1881, p. 361; *C. & S.* no. 1735.

Differs from *armigera* in having the submarginal fuscous band of fore wing more prominent, its outer edge deeply indented between veins 5 and 6; the marginal series of black specks prominent; the underside much whiter.

Hab. Europe; Syria; Somaliland; Dalhousie; Cutch. *Exp.* 38 millim.

1604. **Heliothis scutosa**, *Schiff. Wien. Verz.* 89, 1; *Esp. Schmett. Eur.* iv. pl. 108, figs. 1, 2; *C. & S.* no. 1737; *Boisd. Chen. Helioth.* pl. i, figs. 1, 2 (larva).

Reddish brown. Fore wing with a subbasal black line from

costa to vein 1 *b*; an antemedial irregularly waved line; the orbicular and reniform stigmata outlined with black and placed on a whitish patch; a black dentate mark below the cell; a postmedial line excurved from costa to vein 3, then oblique and waved to inner margin, the area between it and a series of submarginal blackish lunules darker; a series of small marginal black lunules. Hind wing suffused with reddish ochreous; a large black cell-spot with a whitish patch beyond it; a black postmedial line; a broad black marginal band usually with a pale patch at the centre of margin. Underside paler, the orbicular and reniform stigmata deep black.

The typical European race is much greyer and whiter than the Eastern race.

Larva green, with subdorsal and sublateral series of black specks and yellow and black dorsal and lateral lines.

Hab. Europe; China; N.W. Himalayas. *Exp.* 34–38 millim.

SECT. II. (*Heliochilus*). Males with large hyaline spaces on the fore wing below the costa and in cell, with the wing-membrane ridged; the costal nervure and veins 7 to 10 much curved.

*1605. **Heliothis translucens**, *Feld. Reis. Nov.* pl. 108, fig. 49; *C. & S.* no. 1757.

♂. Pale brown. Fore wing crossed by ante- and postmedial curved and waved lines, the latter with some white beyond it, followed by a series of white specks with some dark suffusion beyond them. Hind wing whitish, with a large black patch at end of cell; a broad submarginal black band sending fasciæ to the base in interno-median interspace and on inner margin.

Closely allied and possibly identical with *H. inflatus*, Wllgr., from N. America and Hawaii.

Hab. Urni, N.W. Himalayas. *Exp.* 28 millim.

Genus CHARICLEA.

Chariclea, *Curt. Brit. Ent.* pl. 76 (1825).
Curubasa, *Moore, P. Z. S.* 1881, p. 366.
Pradatta, *Moore, P. Z. S.* 1881, p. 364.
Dorika, *Moore, P. Z. S.* 1881, p. 363.
Masalia, *Moore, P. Z. S.* 1881, p. 364.
Sophaga, *Moore, P. Z. S.* 1881, p. 362.

Type, *C. delphinii*, Linn., from Europe.

Range. Europe; Abyssinia; throughout India, Burma, and Ceylon; Australia.

Differs from *Heliothis* in the pair of spines on the fore tibia being stout and more crooked, the inner very long; the mid and hind tibiæ not spined. Fore wing with the apex more or less acute.

SECT. I. Hind wing in male with veins 3, 4 and 6, 7 from the cell.

1606. **Chariclea marginalis**, *Wlk. Cat.* xii, p. 830; *C. & S.* no. 1748.
Curubasa cruentata, *Moore, P. Z. S.* 1881, p. 367; *C. & S.* no. 1742.
Curubasa marginata, *Moore, P. Z. S.* 1881, p. 367; *C. & S.* no. 1744.
Adisura dulcis, *Moore, P. Z. S.* 1881, p. 368, pl. 37, fig. 20; *C. & S.* no. 1746.
Adisura similis, *Moore, P. Z. S.* 1881, p. 369; *C. & S.* no. 1750.

Yellowish white. Fore wing with a broad pale pink fascia along the costa extending to the subcostal nervure, and another along inner margin extending to the middle of interno-median interspace; cilia more or less pink. Hind wing with an indistinct broad fuscous marginal band.

The form *cruentata*, from the N.W. Himalayas, has no marginal band to hind wing.

Hab. N.W. Himalayas; Sikhim; Bombay Presidency; Calcutta; Ganjam. *Exp.* 24–30 millim.

1607. **Chariclea lanceolata**, *Wlk. Cat.* xxxiii, p. 767; *C. & S.* no. 1743.
Curubasa depicta, *Swinh. Trans. Ent. Soc.* 1891, p. 146, pl. 8, fig. 4.

Differs from *marginalis* in being pure white; fore wing with the pink fasciæ broader and brighter; a yellowish patch at base; hind wing uniform white.

The form *depicta* is larger, with the fasciæ of the fore wing purplish pink; the hind wing suffused with fuscous.

Hab. Simla; Mhow; Nilgiris. *Exp.*, ♂ 30, ♀ 30–40 millim.

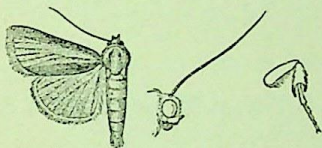



Fig. 115.
Chariclea lanceolata, ♂. 1/1.

1608. **Chariclea decorata**, *Moore, P. Z. S.* 1881, p. 365; *C. & S.* no. 1728.

♂. Differs from *marginalis* in the pink of the fore wing being disposed as a fascia through the cell, and another in the interno-median interspace; an oblique band from apex to inner margin; the cilia pink. Hind wing uniform straw-colour.

Hab. Dharmsála. *Exp.* 20 millim.

1609. **Chariclea bivittata**, *Wlk. Cat.* ix, p. 108; *C. & S.* no. 1727.

Head and thorax chestnut; abdomen whitish. Fore wing reddish orange; a silvery fascia outlined with black from the origin of vein 2 to outer margin; another above vein 1 *b* from the base to outer angle; some white streaks defined with black on the veins at outer margin. Hind wing white.

Hab. Bombay Presidency; Moulmein. *Exp.* 30 millim.

1610. **Chariclea sanguinolenta**, *Moore, P. Z. S.* 1881, p. 363; *C. & S.* no. 1723.
Dorika ignea, *Hmpsn. Ill. Het.* viii, p. 70, pl. 144, fig. 21.

Head and thorax reddish chestnut; abdomen whitish. Fore wing bright golden; the costa pale; diffused coppery-red fasciæ along the costa, median and submedian nervures from base to outer margin and from upper angle of cell to outer margin; traces of dark specks at the angles of cell and of a curved postmedial series; cilia white, slightly tinged with pink at apex and outer angle. Hind wing yellowish white.

The form *ignea* from the Nilgiris has some black on head and thorax; the fore wing with diffused black on costa, median and submedian nervures, and on outer margin below apex; the specks at angles of cell and the postmedial series prominent; cilia bright pink.

Hab. Bombay; Nilgiris. *Exp.* 30–37 millim.

1611. **Chariclea sinuata**, *Moore, P. Z. S.* 1881, p. 363; *C. & S.* no. 1756.

Head, thorax, and fore wing golden orange, suffused with ferruginous red. Fore wing with an indistinct antemedial dentate line; a speck on discocellulars; oblique dentate postmedial line and series of marginal black specks. Hind wing pale ochreous, suffused with fuscous.

Hab. Bombay. *Exp.* 34 millim.

1612. **Chariclea beatrix**, *Moore, P. Z. S.* 1881, p. 365; *Swinh. P. Z. S.* 1886, pl. 41, fig. 5; *C. & S.* no. 1726.
Masalia tosta, *Moore, P. Z. S.* 1888, p. 411.
Masalia rosacea, *Hmpsn. Ill. Het.* viii, p. 71, pl. 144, fig. 23.
Masalia terracotta, *Hmpsn. Ill. Het.* viii, p. 71, pl. 144, fig. 22.
Masalia radiata, *Moore, P. Z. S.* 1881, p. 364; *C. & S.* no. 1755.

Head and thorax pale brownish pink; abdomen white. Fore wing with the apex sometimes acute; whitish, with a broad pale pink fascia on the costal area; another along median nervure expanding between veins 2 and 5, and conjoined to a broad fascia on inner area. Hind wing white, tinged with pink on outer margin.

In *rosacea* and *terracotta* from the Nilgiris there is hardly a trace of white in the interno-median interspace of fore wing, and the hind wing is fuscous; the latter has the fore wing yellowish pink, with some fuscous below the median nervure. In a form from Baluchistan there is hardly any white on fore wing, the inner area of which, as well as the hind wing, is suffused with fuscous; *tosta* has the fore wing almost wholly pink, the hind wing white.

The form *radiata* is dusky pink; fore wing with white streaks beyond cell and below median nervure; hind wing fuscous.

Hab. Baluchistan; N.W. Himalayas; Mhow; Canara; Nilgiris. *Exp.* 22–30 millim.

1613. **Chariclea aureola**, *Wlk. Cat.* ix, p. 108; *C. & S.* no. 1722.
Dorika curta, *Swinh. Trans. Ent. Soc.* 1891, p. 146.

Differs from *beatrix* in having a series of black marginal specks to the fore wing; the hind wing pure white.

In the form *curta* the fore wing is rather shorter, and there are traces of specks on the outer margin of hind wing.

Hab. Bombay; Mhow; Poona; Canara. *Exp.* 30–36 millim.

1614. **Chariclea uncta**, *Swinh. P. Z. S.* 1885, p. 449, pl. 27, fig. 12; *C. & S.* no. 1751.

♂. Head, thorax, and fore wing brownish ochreous, the last with a pinkish tinge on costal area, and some fuscous suffusion on inner area; a postmedial curved series of dark strigæ on the nervules; cilia pink. Hind wing pale, suffused with fuscous. Abdomen pale.

Hab. Bombay. *Exp.* 26 millim.

1615. **Chariclea irrorata**, *Moore, P. Z. S.* 1881, p. 364; *C. & S.* no. 1754.

♀. Differs from *uncta* in the fore wing being uniform pink, with slight irroration and postmedial series of dark specks.

Hab. N.W. Himalayas; Sikhim. *Exp.* 32 millim.

1616. **Chariclea bimaculata**, *Moore, P. Z. S.* 1888, p. 411; *Butl. Ill. Het.* vii, p. 67, pl. 129, fig. 12.
Arsiloncha roseana, *Swinh. Trans. Ent. Soc.* 1890, p. 220, pl. vi, fig. 17.
Pradatta pallescens, *Hmpsn. Ill. Het.* viii, p. 70, pl. 144, fig. 5.
Pradatta pulverulenta, *Hmpsn. Ill. Het.* viii, p. 71, pl. 144, fig. 11.

Head, thorax, abdomen, and fore wing pale straw-colour, the last with a dark speck at end of cell; the veins slightly tinged with pale pink.

The Nilgiri form *pallescens* is much larger than the typical form, and in *pulverulenta* there is a diffused fuscous fascia on the fore wing from the base along median nervure to outer margin, and a small patch at base of vein 1 *b*.

In *roseana* the black specks at end of cell are absent.

Hab. Dharmsála; Sikhim; Nilgiris; Bhámo, Burma. *Exp.* 22–31 millim.

1617. **Chariclea artaxoïdes**, *Moore, P. Z. S.* 1881, p. 366; *C. & S.* no. 1725.
Curubasa calamaria, *Moore, P. Z. S.* 1881, p. 367; *C. & S.* no. 1741.
Pradatta modesta, *Moore, P. Z. S.* 1881, p. 366; *C. & S.* no. 1729.

Uniform bright straw-colour, with a fulvous tinge; abdomen and hind wing with a slight fuscous suffusion.

In the form *modesta* the hind wing is whitish.

Hab. N.W. Himalayas; Mainpuri; Bombay. *Exp.* 27 millim

SECT II. Palpi shorter; hind wing of male with veins 3 and 4 on a long stalk, 6 and 7 on a short stalk.

1618. **Chariclea dora**, *Swinh. Trans. Ent. Soc.* 1891, p. 147.

♂. Head, thorax, and fore wing reddish ochreous; the last with an indistinct diffused dark patch on discocellulars and a curved submarginal diffused fuscous band joined by an oblique streak from the apex. Abdomen and hind wing yellowish white.

♀ with the fore wing unmarked.

Hab. Khandála. *Exp.*, ♂ 26, ♀ 30 millim.

Genus RAGHUVA.

Raghuva, *Moore, P. Z. S.* 1881, p. 362.

Type, *R. confertissima*, Wlk.

Range. Coimbatore.

Differs from *Chariclea* in having the mid and hind tibiæ armed with spines.

1619. **Raghuva confertissima**, *Wlk. Cat.* xxxii, p. 625; *C. & S.* no. 1724.

♂. Head and thorax brownish ochreous. Fore wing brownish ochreous, slightly suffused with ferruginous, especially along

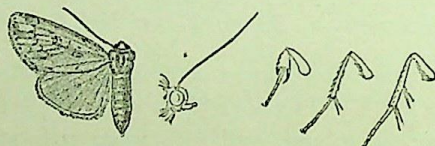



Fig. 116.—*Raghuva confertissima*, ♂. $\frac{1}{1}$.

median nervure; a black spot at end of cell and prominent post-medial and marginal series of black specks. Abdomen and hind wing yellowish white. Underside of fore wing with the black cell-spot prominent.

Hab. Coimbatore. *Exp.* 30 millim.

Genus AGROTIS.

Agrotis, *Ochs. Eur. Schmett.* iv, p. 66 (1816).
Graphiphora, *Ochs. Eur. Schmett.* iv, p. 68.
Peridroma, *Hübn. Verz.* p. 227 (1818).
Axylia, *Hübn. Verz.* p. 242.
Chera, *Hübn. Verz.* p. 211.
Amathes, *Hübn. Verz.* p. 222.
Triphæna, *Hübn. Verz.* p. 221.
Spælotis, *Boisd. Ind. Meth.* p. 106 (1840).

Type, *A. segetis*, Schiff.

Range. Universally distributed.

Eyes naked and without lashes; proboscis fully formed; palpi obliquely porrect, the 2nd joint evenly scaled, the 3rd prominent. Thorax and abdomen without tufts, the latter somewhat flattened. Tibiæ very strongly spined. Fore wing with the outer margin not crenulate; hind wing with veins 3 and 4 from cell.

SECT. I. (*Agrotis*). Males with the antennæ bipectinate, the branches of moderate length.

1620. **Agrotis segetis**, *Schiff. Wien. Verz.* p. 252; *id. Wien. Verz.* 81. 12, figs. 3 *a*, *b*; *C. & S.* no. 2000.
Caradrina triturata, *Wlk. Cat.* x, p. 295.
Agrotis aversa, *Wlk. Cat.* x, p. 345; *C. & S.* no. 1982.
Agrotis marginalis, *Wlk. Cat.* x, p. 339.
Agrotis obliviosa, *Wlk. Cat.* x, p. 340.
Agrotis dividens, *Wlk. Cat.* x, p. 342.
Agrotis correcta, *Wlk. Cat.* x, p. 345; *C. & S.* no. 1987.
Agrotis conspurcata, *Wlk. Cat.* xxxii, p. 696; *C. & S.* no. 1986.
Agrotis repulsa, *Wlk. Cat.* xxxii, p. 696; *C. & S.* no. 1999.
Agrotis certificata, *Wlk. Cat.* xxxii, p. 697.
Agrotis lassa, *Swinh. P. Z. S.* 1886, p. 444; *C. & S.* no. 1993.

Whitish brown, pale brown, or fuscous; palpi darker at sides; collar with dark line; abdomen whitish. Fore wing with double waved subbasal ante- and postmedial lines; an obscure waved submarginal line and marginal series of specks; the orbicular and

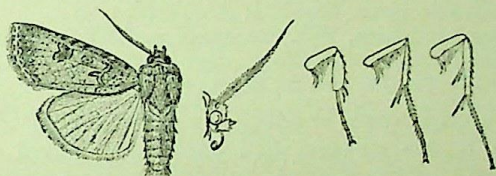



Fig. 117.—*Agrotis segetis*, ♂. 1/1.

reniform with dark centres and edges; the claviform small and black; all these markings being much obscured in the dark specimens. Hind wing iridescent white with dark marginal line, and in some specimens with dark suffusion on the margin.

Hab. Europe; and throughout India and Ceylon. *Exp.* 42–48 millim.

1621. **Agrotis corticea**, *Schiff. Wien. Verz.* 81. 13.
Agrotis fraterna, *Moore, Lep. Atk.* p. 116; *C. & S.* no. 1988.

Differs from *segetis* in the antemedial double lines of the fore wing being prominent; the hind wing tinged with fuscous brown.

Hab. Europe; Madagascar; N.W. Himalayas; Sikhim; Nágas; Nilgiris. *Exp.* 40–42 millim.

1622. **Agrotis biconica,** *Koll. Hügel's Kaschmir*, iv, p. 480.
Agrotis exigua, *Koll. Hügel's Kaschmir*, iv, p. 481.
Agrotis spiculifera, *Guen. Noct.* i, p. 266.
Agrotis aristifera, *Guen. Noct.* i, p. 266; *Moore, Lep. Ceyl.* iii, pl. 147, fig. 5; *C. & S.* no. 1981.

Differs from *segetis* in having the subbasal ante- and postmedial lines of the fore wing almost or quite obsolete; the submarginal line strongly dentate, with dark streaks on it; the orbicular elongate, with a dark streak from it to the reniform; the claviform very elongate and filled in with black.

Hab. S. Africa; N.W. Himalayas; Punjab; Sikhim; throughout the Bombay and Madras Presidencies; Ceylon. *Exp.* 38 millim.

1623. **Agrotis ypsilon,** *Rott, Naturf.* xi, p. 141.
Noctua suffusa, *Fabr. Mant. Ins.* ii, p. 157; *Moore, Lep. Ceyl.* iii, pl. 147, fig. 6; *C. & S.* no. 2001.
Phalæna idonea, *Cram. Pap. Exot.* iii, pl. 275 H.
Bombyx spinula, *Esp. Schmett.* iii, pl. 63, figs. 6, 7.

Differs from *segetis* in the fore wing being more suffused with brown, and with a black streak beyond the reniform; the submarginal line dentate, with two black streaks on it below the apex. Hind wing more or less suffused with fuscous brown.

Hab. Universally distributed, except S. America. *Exp.* 42–56 millim.

1624. **Agrotis ochracea,** *Wlk. Cat.* xxxii, p. 657; *C. & S.* no. 2130.
Graphiphora viaria, *Swinh. P. Z. S.* 1889, p. 412.
Hadena ruptistriga, *Wlk. Cat.* xxxiii, p. 739; *C. & S.* no. 1941.
Graphiphora frontalis, *Moore, Lep. Ceyl.* iii, p. 35; *Hmpsn. Ill. Het.* ix, pl. 161, figs. 20, 21; *C. & S.* no. 2013.

Ochreous, grey-brown, or red-brown; palpi dark at sides. Fore wing with double subbasal and antemedial waved lines; the orbicular and reniform stigmata large in the form *ruptistriga*, with a black spot between them and a triangular black spot before the orbicular, the reniform often filled in with grey or chestnut; a diffused angled medial fuscous band; a double lunulate curved postmedial line; a submarginal pale line and marginal crenulate dark line. Hind wing fuscous brown or red-brown.

Hab. Rawál Pindi; Dharmsála; Thandiáni; Sikhim; Ceylon. *Exp.* 41 millim.

1625. **Agrotis olivascens,** n. sp.

Reddish olive; palpi chestnut at sides. Fore wing with a slight dark streak below median nervure from base; orbicular pale; reniform a pale lunule; the postmedial double lines composed of a series of indistinct lunules with specks on the nervules beyond them. Hind wing pale fuscous; cilia of both wings ochreous. Underside with cell-spot and postmedial line to hind wing.

Hab. Sikhim. *Exp.* 38 millim. Type ♂ in coll. Elwes, ♀ in B. M.

SECT. II. Antennæ of males bipectinate, the branches very short.

1626. **Agrotis brevirami**, n. sp.

♂. Head and thorax reddish grey-brown. Fore wing reddish grey-brown, with very indistinct double waved subbasal and antemedial lines; a diffused medial line angled on median nervure; the orbicular and reniform small and very indistinct; the lunulate postmedial line and irregular sinuous submarginal line indistinct. Abdomen and hind wing fuscous brown.

Hab. Mussooree (*Harford*). *Exp.* 34 millim. Type in B. M.

1627. **Agrotis monticola**, n. sp.

♂. Grey. Fore wing with indistinct subbasal ante- and postmedial double waved lines; orbicular and reniform with slight dark outlines; some pale specks on costa towards apex; an irregularly lunulate pale submarginal line; a marginal series of specks. Hind wing fuscous; underside paler, with cell-spot and indistinct postmedial line.

Hab. Lahoul, 12,000 feet. *Exp.* 38 millim. Type in coll. Elwes.

SECT. III. (*Peridroma*). Antennæ of male with fasciculated cilia.

1628. **Agrotis intracta**, *Wlk. Cat.* x, p. 346; *C. & S.* no. 1991.

Fuscous brown; the hind wing dark fuscous; markings as in *segetis.*

Hab. Dharmsála; Nepal. *Exp.* 46 millim.

1629. **Agrotis sikkima**, *Moore, P. Z. S.* 1867, p. 53; *C. & S.* no. 2079.

Smoky black; head and thorax with some white scales. Fore wing with the lines ill defined; a white speck followed by a black patch in interno-median interspace; the orbicular and reniform white; the medial area irrorated with white scales; three black streaks on the submarginal line. Hind wing whitish, suffused with fuscous towards outer margin.

One specimen has the collar white.

Hab. Sikhim. *Exp.* 36 millim.

1630. **Agrotis undulans**, *Moore, A. M. N. H.* (5) i, p. 233, & *2nd Yarkand Mission*, pl. 1, fig. 10; *C. & S.* no. 2007.

♂. Pale ochreous brown. Fore wing with traces of double waved subbasal ante- and postmedial lines and single waved submarginal line. Hind wing with the cilia white.

Hab. Yarkand; S. Afghanistan; Karáchi. *Exp.* 44 millim.

1631. **Agrotis plecta**, *Linn. Syst. Nat.* p. 851; *Kirby, Eur. Butt. Moths,* pl. 36, fig. 4 *a* (larva).

Ochropleura vicaria, *Wlk. Cat.* x, p. 409.
Ochropleura costalis, *Moore, P. Z. S.* 1867, p. 56; *C. & S.* no. 2021.
Ochropleura ignota, *Swinh. P. Z. S.* 1889, p. 411.

Bright reddish chestnut; palpi dark at sides; collar pale with a black line through it. Fore wing short and square, with a broad white costal fascia from base to postmedial line, usually with a black fascia below it; the ante- and postmedial lines single, indistinct, and curved; the submarginal line almost obsolete; orbicular and reniform small with white outline; claviform almost obsolete; a marginal series of dark specks. Hind wing white, sometimes with a reddish tinge.

Larva brown; the ventral area yellow; fine dark lines on dorsal area; stigmata black.

Hab. N. America; Europe; S. Africa; Japan; Sikhim; Ceylon. *Exp.* 34 millim.

1632. **Agrotis conformis**, *Swinh. Trans. Ent. Soc.* 1885, p. 349, pl. 9 fig. 5; *C. & S.* no. 1984.

♂. Uniform ochreous; the hind wing ochreous white.

Hab. Quetta. *Exp.* 38 millim.

1633. **Agrotis cespitis**, *Swinh. Trans. Ent. Soc.* 1885, p. 349, pl. ix, fig. 4; *C. & S.* no. 1983.

♂. Pale ochreous; collar with a line through it. Fore wing with indistinct double subbasal ante- and postmedial waved lines and waved submarginal line; orbicular, reniform, and claviform with indistinct dark outlines; a marginal dark line. Hind wing ochreous white.

Hab. Quetta. *Exp.* 32 millim.

SECT. IV. (*Chera*). Antennæ of male minutely ciliated.

A. *Hind wing with the apex slightly produced.*

1634. **Agrotis tenuis**, *Butl. Ill. Het.* vii, p. 57, pl. 127, fig. 12.

♂. Head and thorax bright chestnut-red; abdomen paler. Fore wing chestnut-red; the orbicular and reniform large and on a dark patch; the postmedial waved line indistinct; the submarginal line regularly curved, except that it is bent inwards below the costa. Hind wing pale red, the cilia chestnut. Underside of fore wing fuscous, the costal and outer areas reddish; hind wing pale reddish, the costal area darkest; a cell-spot and indistinct postmedial line.

Hab. Laka, Kángra, N.W. Himalayas. *Exp.* 40 millim.

B. *Hind wing with the apex rounded.*

1635. **Agrotis descripta**, *Brem. Lep. Ost-Sib.* p. 51, pl. iv, fig. 11 (1864).

Cerastis subdolens, *Butl. Trans. Ent. Soc.* 1881, p. 181.
Graphiphora basistriga, *Moore, P. Z. S.* 1867, p. 54; *C. & S* no. 2008

Graphiphora vulpina, *Moore, Lep. Atk.* p. 118; *C. & S.* no. 2019.
Graphiphora rubicilia, *Moore, P. Z. S.* 1867, p. 55; *C. & S.* no. 2017.
Graphiphora canescens, *Butl. Ill. Het.* ii, p. 28, pl. 30, fig. 1.
Orthosia erubescens, *Butl. A. M. N. H.* (5) v, p. 224; *C. & S.* no. 1914.
Graphiphora flavirena, *Moore, P. Z. S.* 1881, p. 352, pl. 38, fig. 3; *C. & S.* no. 2012.
Graphiphora nigrosigna, *Moore, P. Z. S.* 1881, p. 352, pl. 38, fig. 4; *C. & S.* no. 2015.
Chera efflorescens, *Hmpsn. Ill. Het.* viii, p. 78, pl. 145, fig. 7.
Chera erubescens, *Hmpsn. Ill. Het.* viii, p. 78, pl. 145, fig. 14.

Fuscous or purplish grey-brown, pale or dark red-brown, or bright red or golden brown. Palpi black at sides, or pink in the golden specimens. Fore wing with the subbasal, ante- and postmedial waved lines indistinct, the last much curved; the submarginal line pale and angled below the costa; the orbicular and reniform indistinct, the latter often with the upper part ochreous or reddish, the lower part fuscous; the claviform small and obsolescent, sometimes filled in with black. Hind wing pale or dark fuscous; cilia of both wings reddish. Underside with a postmedial line doubly curved on hind wing, which has a cell-spot.

Descripta = subdolens = canescens are reddish forms; *basistriga* is yellowish chestnut with distinct markings; *rubicilia* golden brown with the markings indistinct; *efflorescens* and *erubescens* from the Nilgiris are vinous grey-brown with very indistinct markings, the latter with the claviform black.

Hab. Japan; N.W. Himalayas; Sikhim; Nilgiris. *Exp.* 32–40 millim.

1636. **Agrotis cerastoides,** *Moore, P. Z. S.* 1867, p. 54; *C. & S.* no. 2009.
Apamea nubila, *Moore, P. Z. S.* 1881, p. 346, pl. 38, fig. 10; *C. & S.* no. 2057.

Differs from *descripta* in being dark purplish grey; the postmedial double line of fore wing more prominent and evenly curved.

Hab. Simla; Sikhim. *Exp.* 32–40 millim.

1637. **Agrotis curviplena,** *Wlk. Cat.* xxxiii, p. 715; *C. & S.* no. 1913.

Head and thorax clothed with ochreous and rufous hair; abdomen fuscous. Fore wing ochreous and rufous; the double subbasal and antemedial waved lines prominent; the orbicular, reniform, and claviform large with rufous outlines; an indistinct medial line angled below the costa in cell and on median nervure; a lunulate postmedial line; the submarginal line straight and dark rufous; a marginal fine line. Hind wing dark fuscous, the cilia ochreous. Underside of fore wing fuscous, with the costal and outer areas reddish ochreous; hind wing reddish ochreous, with irregular postmedial line.

Hab. Sikhim. *Exp.* 40 millim.

1638. **Agrotis cervina,** *Moore, P. Z. S.* 1867, p. 47, pl. 6, fig. 18; *C. & S.* no. 1704.

♂. Head and thorax purplish grey; palpi and pectus bright chestnut; abdomen reddish. Fore wing purplish grey; a double subbasal chestnut line with a speck beyond it; double curved antemedial and slightly vinous postmedial lines, the area between them suffused with chestnut; the orbicular grey, large, and oblique; the reniform dark and indistinct; an indistinct waved chestnut submarginal line; a marginal series of specks; cilia reddish. Hind wing and underside reddish brown; the latter with postmedial line to both wings.

Hab. Sikhim. *Exp.* 46 millim.

1639. **Agrotis albipennis,** *Butl. Ill. Het.* vii, p. 58, pl. 127, fig. 13.

Pale red-brown; palpi chestnut at sides; collar with dark edge; abdomen pale, chestnut at extremity. Fore wing pale red-brown; the subbasal line deep black from costa to above vein 1; the antemedial waved line very oblique, narrowing from a deep black spot on costa; the orbicular and reniform defined by fine lines and incomplete above and below, the latter with a dark line in centre; claviform defined by a fine line; an obliquely curved medial line with a diffused darker shade beyond it; the postmedial line slightly waved and incurved at vein 3, arising from a black speck on costa; submarginal and marginal lines, the former slightly angled below costa, where there is a dark shade inside it. Hind wing ochreous white in male, fuscous in female.

Hab. Dharmsála. *Exp.* 40 millim.

1640. **Agrotis putris,** *Linn. Syst. Nat.* p. 850; *Buckler, Brit. Butt. Moths*, pl. 52, fig. 5 (larva).

Axylia lignosa, *Hubn. Eur. Schmett. Noct.* fig. 245.

Axylia triseriata, *Moore, P. Z. S.* 1888, p. 409; *C. & S.* no. 1715 A.

Head and collar whitish red-brown; thorax red-brown; abdomen fuscous. Fore wing ochreous white; the costal area suffused with red-brown; the basal area streaked with red-brown as far as the highly dentate double antemedial line; orbicular and reniform with dark centres and outline; claviform dentate and obsolescent; the postmedial line consisting of a series of small lunules, the submarginal line of a double series of specks; a marginal series of specks with some red-brown marks on margin. Hind wing whitish with slight brown suffusion.

Larva fuscous; the head black ringed with yellow; thoracic somites with two pairs of dark stripes; the other somites with subdorsal and lateral series of black spots and pale sublateral line; some yellow on 4th and anal somites. Another form has black specks on the thoracic somites and dark double dorsal bands and

lateral stripes instead of spots on the other somites; the yellow confined to the terminal somites.

Hab. Europe; Japan; Dharmsála. *Exp.* 40 millim.

1641. **Agrotis renalis**, *Moore, P Z. S.* 1881, p. 341; *C. & S.* no. 1715.

Differs from *putris* in the orbicular and reniform stigmata being smaller; a blackish fascia from the former to the outer margin below apex; cilia chequered brown and pale.

Hab. N.W. Himalayas; Punjab; Sind. *Exp.* 36 millim.

1642. **Agrotis dispalata**, *Swinh. Trans. Ent. Soc.* 1891, p. 145.

Differs from *renalis* in the dark fascia of the fore wing being interrupted at the middle; the hind wing pure white.

Hab. Poona; Khandála. *Exp.* 28 millim.

1643. **Agrotis niveisparsa**, *Butl. Ill. Het.* vii, p. 54, pl. 127, fig. 11.

♂. Head, thorax, and fore wing dark brown irrorated with grey, the last with the subbasal, ante- and postmedial double waved lines somewhat indistinct; the orbicular and reniform large, not prominent, and outlined with ochreous and black, a dark shade round the reniform; a submarginal series of ochreous specks, those towards the costa having dark dashes before them; a marginal series of black points; three white specks on costa towards apex. Abdomen and hind wing dark fuscous, the latter with a dark lunule at end of cell and postmedial band on underside.

Hab. Dharmsála. *Exp.* 40 millim.

1644. **Agrotis griseivena**, n. sp.

♀. Head and collar reddish; thorax and abdomen grey. Fore wing pale red-brown; the basal three-fourths of costa grey; the median nervure and veins 1, 3, and 4 as far as the submarginal line grey; the subbasal and antemedial double waved lines indistinct towards costa, black below the cell; the orbicular, reniform, and claviform with black and grey outlines; the postmedial lunulate line black and grey; a submarginal slightly waved very prominent grey line; a marginal lunulate black line; base of cilia ochreous. Hind wing pale fuscous. Underside with postmedial sinuous line to both wings.

Hab. Dalhousie (*Harford*). *Exp.* 40 millim. Type in B. M.

1645. **Agrotis ravida**, *Schiff. Wien. Verz.* p. 80.
Noctua obscura, *Brahm, Ins. Kal.* i, p. 191.
Noctua bigramma, *Esp. Schmett. Eur.* pl. 150, fig. 2.
Noctua obducta, *Esp. Schmett. Eur.* pl. 142, fig. 4.
Noctua austera, *Esp. Schmett. Eur.* pl. 142, fig. 5.
Graphiphora valida, *Wlk. Cat.* xxxiii, p. 711; *C. & S.* no. 2018 A.

Grey-brown, sometimes with a reddish tinge. Fore wing with a black streak from base below median nervure; the subbasal double

black line waved, the antemedial dentate; the orbicular and reniform with black outlines, and often with a black streak between them, the former often elongate; claviform narrow and often obsolete; the double waved postmedial line curved and indistinct; three pale specks on costa towards apex; the submarginal pale line indistinct. Underside of both wings with a postmedial line.

Hab. N. America; Europe; Japan; China; Thandiáni, Punjab. *Exp.* 48 milim.

1646. **Agrotis modesta,** *Moore, P. Z. S.* 1881, p. 351; *C. & S.* no. 1994.

Spælotis ambigua, *Butl. Ill. Het.* vii, p. 54, pl. 128, figs. 10, 11.

Differs from *ravida* in being pale or dark red-brown; the abdomen and hind wing dark fuscous. Fore wing with no black streak from base; the antemedial double line waved; the orbicular rounded; claviform present. Underside without postmedial line; hind wing with a dark spot at end of cell.

Hab. Dharmsála. *Exp.* 44 millim.

1647. **Agrotis c-nigrum,** *Linn. Syst. Nat.* p. 852; *C. & S.* no. 2016; *Hübn. Eur. Schmett. Noct.* pl. 24, fig. 111; *Hmpsn. Ill. Het.* ix, pl. 176, fig. 4 (larva).

Bombyx non-atrum, *Esp. Schmett. Eur.* iii, text, p. 385.

Noctua gothica, var. singularis, *Esp. Schmett. Eur.* iii, pl. 76, fig. 3.

Head, thorax, and fore wing dark brown or red-brown. Palpi black at sides; collar whitish, tipped with brown, and with a fuscous line on it; abdomen fuscous. Fore wing with double subbasal and antemedial evenly curved black lines; a pale triangular patch from the middle of costa obliterating the orbicular, which has triangular black patches before and after it; reniform large, pale and fuscous, and defined by inner and outer lines; claviform small and indistinct; an indistinct double waved and much curved postmedial line with a series of dark specks on it; the submarginal line indistinct, angled and defined by black below the costa. Hind wing whitish, suffused with fuscous. Underside with indistinct postmedial line and cell-spot to hind wing.

Larva pink, with a broad dark brown subdorsal band; a lateral yellow band with brown spots on it; head red-brown.

Hab. N. America; Europe; Japan; N.W. Himalayas; Khásis; Bombay; Nilgiris; Ceylon. *Exp.* 44 millim.

1648. **Agrotis ditrapezium,** *Borkh. Schmett. Eur.* iv, p. 515; *C. & S.* no. 2023.

Noctua tristigma, *Treitsche, Ochs. Eur. Schmett.* v, p. 243.

Ochropleura consanguinea, *Moore, P. Z. S.* 1881, p. 353; *C. & S.* no. 2020.

Ochropleura renalis, *Moore, P. Z. S.* 1867, p. 55; *C. & S.* no. 2025.

Differs from *c-nigrum* in the collar being usually of the ground-colour, sometimes rufous. Fore wing with the whole costal area

concolorous or with a whitish fascia from the base to postmedial line; orbicular grey-brown and forming a complete circle, the cell on each side of it black. Hind wing darker fuscous.

The form *renalis* has the double antemedial lines of the fore wing with two sinuations, instead of oblique and minutely dentate; the hind wing darker.

Hab. N.W. Himalayas. *Exp.* 50–58 millim.

1649. **Agrotis junctura,** *Moore, P. Z. S.* 1881, p. 351; *C. & S.* no. 1992.

♂. Differs from *ditrapezium* in the subbasal and antemedial lines of fore wing being inwardly oblique; the orbicular oval and oblique.

Hab. Dalhousie. *Exp.* 42 millim.

1650. **Agrotis flammatra,** *Fabr. Mant. Ins.* ii. p. 155; *C. & S.* no. 2024.

Agrotis basiclavis, *Wlk. Cat.* x, p. 346.

Differs from *c-nigrum* in being pale brown; the collar brown with a deep black triangular mark. Fore wing with a broad pale costal fascia from the base to postmedial line; no subbasal line but a black streak from the base below median nervure; orbicular pale, rounded, and joined to the costal fascia; reniform pale; the area in the cell outlining the stigmata varying from brown to dark fuscous; claviform almost obsolete; a marginal series of dark specks. Hind wing fuscous brown.

Hab. Europe; N.W. Himalayas; Punjab; Sikhim. *Exp.* 56 millim.

1651. **Agrotis triangularis,** *Moore, P. Z. S.* 1867, p. 55; *C. & S.* no. 2027.

Differs from *flammatra* in being dark purplish red-brown; the collar white, tinged with rufous in front of the triangular black mark; costal fascia white or tinged with rufous; the orbicular subtriangular; the cell not darker than the ground-colour; the ante- and postmedial double lines rufous. Hind wing dark fuscous.

Hab. Japan; N.W. Himalayas; Sikhim; Satára; Nilgiris. *Exp.* 48 millim.

1652. **Agrotis accipiter,** *Feld. Reis. Nov.* pl. 111, fig. 29; *C. & S.* no. 2261.

Head and collar yellowish white; thorax and abdomen brown. Fore wing brown; the costal area suffused with grey-green; subbasal, ante- and postmedial waved black lines; the orbicular and reniform large with some dark suffusion round them, the latter with grey centre; an indistinct submarginal line with a

dark dash on it below the costa; a marginal irregular lunulate line. Hind wing pale yellow, with a broad fuscous marginal band.
Hab. Pangi, Ladák; Sikhim. *Exp.* 48 millim.

1653. **Agrotis pronuba,** *Linn. Syst. Nat.* p. 842; *Boisd. Chen. Noct.* pl. ix, figs. 4, 5, 6 (larva).
Agrotis innuba, *Treitsche, Eur. Schmett.* v, 1, p. 265.
Triphæna pronuba, var. hoegei, *Herr.-Schäffer, Neue Schmett.* p. 25, figs. 117, 118.
Triphæna subsequa, *Koll.* (*nec Treitsche*) *Hügel's Kaschmir*, iv, p. 478.

Head and collar brownish white, the latter with a red-brown line through it and dark tip; palpi red-brown at sides; thorax red-brown or fuscous; abdomen reddish ochreous. Fore wing greyish fuscous or red-brown; the medial and inner areas suffused with fuscous; the subbasal, ante- and postmedial double waved lines somewhat indistinct; orbicular filled in with grey, the reniform with fuscous; the claviform obsolete; the waved submarginal line defined with black below the costa; a marginal lunulate line. Hind wing bright yellow, with a broad irregular submarginal black band.

Larva yellow, with the ventral area green, a series of short subdorsal black streaks, the stigmata black; or purplish grey, with a yellow dorsal line and yellow marks below the black streaks; or purplish grey varied with brown, the ventral area green, a lateral brown and yellow line.
Hab. Europe; Dharmsála. *Exp.* 60 millim.

*1654. **Agrotis ? cuprea,** *Moore, P. Z. S.* 1867, p. 64; *C. & S.* no. 2272.

Dark red-brown. Fore wing with double waved subbasal and antemedial black lines; the orbicular and claviform spots large and black; a black quadrate spot in end of cell; the reniform with black outline; the median nervure, discocellulars, and bases of veins 3, 4, 5 pale; a pale submarginal line with a series of black spots on its inner edge; a waved black marginal line. Hind wing copper-colour.
Hab. "Bengal." *Exp.* 56 millim.

Genus AMPHIPYRA.

Amphipyra, *Ochs. Schmett. Eur.* iv, p. 70 (1816).
Apopestes, *Hübn. Verz.* p. 275 (1818).

Type, *A. tragopogonis*, Linn., from Europe.
Range. Europe; Japan; Himalayas; Khási Hills.
Eyes naked and without lashes; proboscis fully formed; palpi upturned, the 2nd joint reaching vertex of head, the 3rd prominent; antennæ simple in both sexes; thorax and abdomen without tufts, the latter flattened; tibiæ without spines. Fore wing of rather even breadth throughout; the outer margin nearly erect; cilia crenulate.

SECT. 1. (*Amphipyra*). Palpi with the 2nd joint smoothly scaled.

1655. **Amphipyra monolitha**, *Guen. Noct.* ii, p. 414; *C. & S.* no. 2258.
Amphipyra surnia, *Feld. Reis. Nov.* pl. 112, fig. 17.

Head and thorax dark chocolate; abdomen fuscous. Fore wing with the waved subbasal and antemedial double lines filled in with

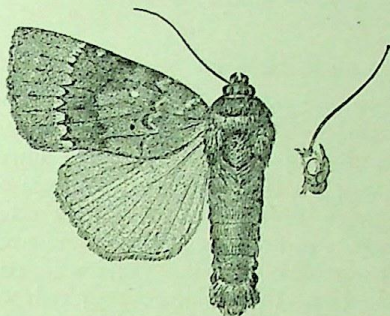



Fig. 118.—*Amphipyra monolitha*, ♂. 1/1.

silvery grey; the orbicular small and silvery; the postmedial waved line bent inwards below the costa, and with diffused silvery grey on its outer edge; a submarginal series of ill-defined silvery-grey lunules, those towards the costa having black streaks inside them and joined by grey streaks to a marginal series of specks. Hind wing coppery red, the costal area suffused with red-brown; underside with cell-spot and broad marginal band. The silvery grey of fore wing may be replaced by pale brown.

Hab. Japan; N. China; Dharmsála; Sikhim. *Exp.* 66 millim.

1656. **Amphipyra magna**, *Wlk. Cat.* xxxiii, p. 868; *C. & S.* no. 2257.
Amphipyra chalcoptera, *Feld. Reis. Nov.* pl. 112, fig. 18; *C. & S.* no. 2254.

Differs from *monolitha* in the head, thorax, and fore wing being pale red-brown irrorated with black scales, the last with a broad medial black-brown band; the subbasal and postmedial lines more prominent and waved; the orbicular larger; the submarginal dark and pale lunules more prominent and joined to the marginal specks by dark streaks. Underside of both wings with postmedial diffused band.

Hab. N.W. Himalayas; Punjab. *Exp.* 70 millim.

1657. **Amphipyra livida**, *Schiff. Wien. Verz.* p. 85.
Amphipyra corvina, *Mqtsch. Bull. Soc. Nat. Mosc.* xxxix, i, p. 194 (1866)
Amphipyra corvus, *C. & S.* no. 2255.

Head, thorax, and fore wing dark shining purplish fuscous; the vertex of head sometimes pale reddish; abdomen fuscous. Hind wing pale, suffused with coppery red, the apical area with fuscous.

Hab. Europe; Japan; China; Khásis. *Exp.* 48–52 millim.

1658. **Amphipyra cupreipennis**, *Moore, Lep. Atk.* p. 155; *C. & S.* no. 2256.

♂. Differs from *livida* in having slight traces of a curved dark medial band on the fore wing. Hind wing deep coppery red, the costal area brown.

Hab. Sikhim. *Exp.* 66 millim.

1659. **Amphipyra albicilia**, n. sp.

♀. Head, thorax, and abdomen reddish grey. Fore wing reddish grey, the veins slightly streaked with black; the subcostal, ante- and postmedial double waved lines indistinct; lunulate postmedial and marginal lines; a pale reddish streak from middle of cell to near outer margin, with an ill-defined dark streak below it; a dark streak from base in interno-median interspace, becoming pale red from below the middle of cell. Hind wing coppery red, with white margin and cilia. Underside coppery red, with broad costal white band to fore wing; both wings with a broad marginal white band and whitish lunule at end of cell.

Hab. Mussooree (*Harford*). *Exp.* 58 millim. Type in B. M.

Sect. II. (*Apopestes*). Palpi with the 2nd joint clothed with long hair in front.

1660. **Amphipyra spectrum**, *Esp. Schmett. Eur.* iv, 1, p. 131, pl. 100, figs. 3, 4; *Dup. & Guen. Noct.* pl. i (larva); *C. & S.* no. 2305.
Noctua socrus, *Giorna, Cal. Ent.* 143.
Noctua genistæ, *Vill. Ent. Linn.* ii. p. 272, no. 339.
Amphipyra phantasma, *Eversm. Bull. Soc. Nat. Mosc.* xvi, 1843, p. 546; *C. & S.* no. 2304.
Apopestes indica, *Moore, P. Z. S.* 1883, p. 22; *C. & S.* no. 2303.
Anthophila ligaminosa, *C. & S.* no. 1886 (*nec Eversm.*).

Ochreous brown; head and thorax irrorated with black scales. Fore wing irrorated with black scales; a short basal black line from the costa with a spot below it; a strongly waved antemedial line; traces of a medial line; an irregularly waved prominent postmedial line bent outwards round end of cell; reniform with indistinct greyish outline; a submarginal series of pale specks with blackish patches inside them towards inner margin; a series of marginal specks. Underside with narrow medial black band to both wings.

The variety *phantasma* has the fore wing more mottled with black, the transverse lines less prominent.

Larva. Yellowish green, with two broad black subdorsal lines filled in with yellow, below this is a band of blue with dark spots on it, then yellow with black specks, then a band of blue with the stigmata dark, and some irregular black striæ above the claspers.

Hab. Europe; Persia; Quetta; Afghanistan; Hazára, N.W. Punjab; Yarkand; Dharmsála. *Exp.* 80 millim.

1661. **Amphipyra himalayica**, n. sp.

♂. Differs from *spectrum* in being greyish ochreous-brown without black irroration. Fore wing with the transverse lines but slightly darker than the ground-colour and with ochreous outlines; the subbasal line absent; the antemedial nearer the base and minutely dentate; the postmedial lunulate; a submarginal irregularly lunulate line; the reniform represented by a lunule at end of cell. Underside with indistinct cell-spot and postmedial pale line to both wings.

Hab. Murree (*Harford*). *Exp.* 52 millim. Type in B. M.

Genus **EPILECTA**.

Epilecta, *Hübn. Verz.* p. 220 (1818).

Type, *E. linogrisea*, Schiff., from Europe.

Range. Europe; Japan; Himalayas.

Differs from *Agrotis* in the fore tibiæ not being spined; the antennæ ciliated.

1662. **Epilecta semiherbida**, *Wlk. Cat.* xi, p. 743; *Butl. Ill. Het.* vi, pl. 110, fig. 1; *C. & S.* no. 2031.
Epilecta decorata, *Butl. A. M. N. H.* (5) iv, 1879, p. 361.

Head, thorax, and fore wing variegated with green and brown shades; palpi black at sides; abdomen fuscous brown. Fore

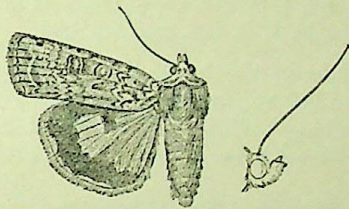



Fig. 119.—*Epilecta semiherbida*, ♂. ½.

wing with the subbasal, ante- and postmedial double waved lines distinct; the two former with a black speck in the cell between them; the orbicular and reniform fuscous, their inner and outer edges defined by black lines; the claviform obsolete; the waved submarginal line with a black spot on it below the costa; a marginal series of lunules. Hind wing bright yellow, with a large black cell-spot; a black fascia along the costa joining the broad irregular submarginal black band.

Hab. Japan; Dharmsála; Sikhim. *Exp.* 44 millim.

Genus **AUCHA**.

Aucha, *Wlk. Cat.* xiii, p. 1137 (1857).

Type, *A. velans*, Wlk.

Range. Bombay; Ceylon; Burma; Penang.

Eyes naked and without lashes; proboscis fully developed; palpi upturned and smoothly scaled, the second joint reaching above vertex of head, the third short. Antennæ simple. Thorax and abdomen without tufts and smoothly scaled; tibiæ without spines. Fore wing with the cilia not crenulate; hind wing produced at apex.

1663. **Aucha velans**, *Wlk. Cat.* xiii, p. 1138; *Hmpsn. Ill. Het.* ix, pl. 162, fig. 15; *C. & S.* no. 2350.

Head and thorax dark brown; abdomen fuscous brown. Fore wing dark brown, with faint traces of the usual waved lines and the orbicular and reniform. Hind wing black-brown; an orange band, sometimes suffused with brown, beyond the cell and below its lower angle; an orange marginal streak at anal angle; cilia orange, streaked with fuscous. Underside fuscous brown; hind wing with the disk and anal angle tinged with orange; a cell-spot and broad marginal dark band.

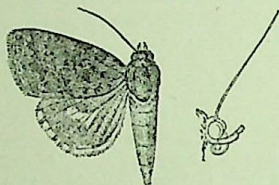



Fig. 120.
Aucha velans, ♂. 1/1.

In some specimens the head, thorax, and fore wing are suffused with olive-green.

Hab. Ceylon; Burma. *Exp.* 40 millim.

1664. **Aucha nectens**, *Wlk. Cat.* xv, p. 1704; *C. & S.* no. 2349.
Briarda latipennis, *Wlk. Cat.* xxxiii, p. 894.

Differs from *velans* in the head, thorax, and fore wing being olivaceous grey, the last with diffused antemedial, medial, and submarginal bands often developed; the waved lines usually well marked. Underside with the basal half of both wings suffused with orange.

Hab. Bombay; Penang. *Exp.* 44 millim.

Genus **HYPERNÆNIA**, nov.

Type, *H. denticulata*, Warr.
Range. Himalayas; Burma.
Differs from *Epilecta* in the fore wing being broader, the apex more produced, and the outer margin more oblique; the cilia crenulate.

SECT. I. Palpi with the 3rd joint short.

1665. **Hypernænia denticulata**, *Warr. P. Z. S.* 1888, p. 307; *C. & S.* no. 2022 A.

Fuscous with a slight reddish tinge. Fore wing with the costal area paler; the subbasal and antemedial double waved lines very

indistinct; the orbicular and reniform indistinct; the postmedial line very highly dentate from the subcostal to vein 2; the area beyond the irregularly waved submarginal line paler. Hind wing fuscous; the cilia white.

Hab. Thandiáni, Punjab. *Exp.* 60 millim.

1666. **Hypernænia atrovirens,** *Wlk. Cat.* xxxii, p. 614; *C. & S.* no. 1758.

Head and thorax clothed with black, brown, and grey scales; abdomen fuscous. Fore wing clothed with black and olive scales; subbasal and antemedial double waved black lines; some pinkish brown below base of median nervure and beyond the costal part of antemedial line; the orbicular and reniform with black and white edges and pinkish brown centres, the area between them black; an indistinct waved medial black line; the postmedial lunulate black line with pale marks in the sinuations; some white specks on costa towards apex; a submarginal series of irregularly placed black

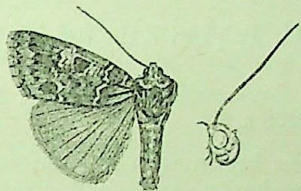



Fig. 121.—*Hypernænia atrovirens,* ♂

lunules with reddish brown beyond them; a marginal series of small black lunules; cilia white and fuscous. Hind wing dark fuscous, the cilia whitish. Underside fuscous black; fore wing with white orbicular and reniform stigmata and postmedial black line; hind wing with the basal two-thirds suffused with white; a cell-spot and postmedial line.

Hab. Sikhim; Rangoon. *Exp.* 48 millim.

1667. **Hypernænia nigroviridis,** *Wlk. Cat.* xxxii, p. 615; *C. & S.* no. 1761.

Differs from *atrovirens* in the basal two-thirds of fore wing being suffused with silvery green; the subbasal, antemedial, medial, and postmedial lines indistinct; the outer third of wing coppery red-brown, with the submarginal lunules conjoined and ill-defined; a blue-grey band inside the marginal lunules. Underside of fore wing with marginal blue-grey band; the hind wing less suffused with white.

Hab. Sikhim. *Exp.* 50 millim.

1668. **Hypernænia renalba,** *Moore, Lep. Atk.* p. 111; *C. & S.* no. 2082.

♀. Head black-brown; thorax reddish brown; abdomen fuscous. Fore wing black-brown; some obscure dark marks

between the subbasal and antemedial lines; reniform pure white; the lunulate postmedial line indistinct; the submarginal line consisting of an irregular series of dashes; a marginal series of white specks. Hind wing fuscous. Underside of fore wing with the reniform white; hind wing whitish, with prominent dark cell-spot and postmedial line; outer area suffused with fuscous.

Hab. Sikhim. *Exp.* 38 millim.

1669. **Hypernænia violacea**, *Butl. Ill. Het.* vii, p. 54, pl. 127, fig. 5.

Head, thorax, and fore wing dark purplish brown, the last with faint traces of ante- and postmedial waved lines and medial and submarginal diffused bands; the orbicular and reniform barely traceable. Abdomen and hind wing dark fuscous, the former with the extremity red-brown. Underside with the postmedial line more prominent.

Hab. Dharmsála. *Exp.* 52–60 millim.

Sect. II. Palpi with the 3rd joint long.

1670. **Hypernænia flavicaudata**, *Warr. P. Z. S.* 1888, p. 312; *C. & S.* no. 2256 A.

♀. Pale violaceous brown with an ochreous tinge; anal tuft ochreous. Fore wing brown; subbasal and antemedial waved lines, between which are two diffused waved bands; a medial diffused band; the postmedial waved line excurved beyond cell; the submarginal line irregularly waved and with a diffused band before it; a lunulate marginal line. Hind wing fuscous with an ochreous tinge; the costal area and outer margin ochreous. Underside with a faint cell-spot and postmedial line to each wing.

Hab. Thandiáni, Punjab. *Exp.* 56–60 millim.

Genus **HERMONASSA**.

Hermonassa, *Wlk. Cat.* xxxii, p. 631 (1865).

Type, *H. consignata*, Wlk.

Range. Japan; Himalayas.

Differs from *Agrotis* in having the palpi upturned and clothed with long hair below running out to a sharp point, the 3rd joint reaching above vertex of head. Fore wing long and narrow, with the apex rounded. Hind wings with veins 3 and 4 from cell, 6 and 7 stalked.

1671. **Hermonassa consignata**, *Wlk. Cat.* xxxii, p. 632; *C. & S.* no. 2034.

Hermonassa lunata, *Moore, Lep. Atk.* p. 120; *C. & S.* no. 2037.

Red-brown. Fore wing with a double waved subbasal line with

black marks on its edges; a double antemedial waved line traversed by the black claviform; the orbicular and reniform stigmata black with pale edges, sometimes with a fuscous patch between them; a double postmedial curved and waved line; a waved submarginal line; a marginal series of lunules. Hind wing pale brownish fuscous.

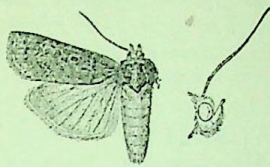



Fig. 122.
Hermonassa consignata, ♂. 1/1.

The form *consignata* is dark red-brown, *lunata* chestnut-brown.

Hab. Kashmir; Dharmsála; Sikhim. *Exp.* 30 millim.

1672. **Hermonassa spilota**, *Moore, P. Z. S.* 1867, p. 55; *C. & S.* no. 2026.

♀. Differs from *consignata* in the costal area of the fore wing being suffused with grey to near the apex; the transverse lines quite obsolete; the orbicular an elongate oval; the claviform more elongate; the veins pale; a marginal series of black specks.

Hab. "Bengal." *Exp.* 30 millim.

1673. **Hermonassa incisa**, *Moore, Lep. Atk.* p. 120; *C. & S.* no. 2036.

Differs from *consignata* in being browner. Fore wing with the transverse lines very indistinct; the submarginal line more dentate. Hind wing fuscous.

Hab. Dharmsála; Sikhim. *Exp.* 38 millim.

1674. **Hermonassa chalybeata**, *Moore, P. Z. S.* 1881, p. 353, pl. 38, fig. 17; *C. & S.* no. 2033.

♀. Differs from *incisa* in the head, thorax, and fore wing being dark cupreous brown, the last with all the markings indistinct.

The Kumaon specimen is rather duller brown.

Hab. Kumaun; Sikhim. *Exp.* 34 millim.

1675. **Hermonassa lanceola**, *Moore, P. Z. S.* 1867, p. 59; *C. & S.* no. 1938.

Differs from *consignata* in being paler and more olive-brown; the orbicular kidney-shape; the hind wing dark brown.

Hab. Sikhim. *Exp.* 33 millim.

1676. **Hermonassa sinuata**, *Moore, P. Z. S.* 1881, p. 353, pl. 38, fig. 5; *C. & S.* no. 2038.

Hermonassa cuprina, *Moore, Lep. Atk.* p. 120; *C. & S.* no. 2035.

Differs from *consignata* in being bright reddish chestnut. Fore wing with no black markings; some dentate marks beyond the subbasal line; the orbicular, reniform, and claviform filled in by the ground-colour. Hind wing dark fuscous.

The form *cuprina* is darker than *sinuata*, the hind wing black-brown.

Hab. Sikhim. *Exp.* 44 millim.

Genus HADENA.

Hadena, *Schrank, Fauna Boica*, ii, 2, p. 158 (1802).
Mamestra, *Ochs. Schmett. Eur.* iv, p. 76 (1816).
Neuria, *Guen. Ann. Soc. Ent. Fr.* x, p. 241 (1841).

Type, *H. cucubali*, Schiff., from Europe.

Range. Universally distributed.

Eyes hairy; palpi upturned and clothed with long hairs, the 3rd joint short; antennæ of male ciliated. Thorax squarely scaled and flattened; abdomen with dorsal tufts on proximal segments; tibiæ not spined. Wings short and broad; hind wing with veins 3 and 4 from cell or on a very short stalk.

Sect. I. Fore wing short and broad.

1677. **Hadena trifolii**, *Rott. Naturf.* ix, p. 131.
Noctua chenopodii, *Fabr. Mant. Ins.* ii, p. 156.

Pale brown. Fore wing with three highly-waved lines before the middle; orbicular and reniform dark ringed, the former with pale centre, the latter with dark; claviform a black lunule; a curved, dentate, dark, postmedial line; a pale irregularly waved submarginal line with a W-mark at centre; some small dark lunules on margin; cilia with pale streaks. Hind wing pale, the veins and a broad marginal band fuscous; cilia white.

Hab. Europe; Campbellpur. *Exp.* 36 millim.

1678. **Hadena perdentata**, n. sp.

♀. Head, thorax, and abdomen clothed with dark brown, red-brown, and grey hair. Fore wing pale brown, suffused with leaden grey; subbasal and antemedial ochreous dentate lines with black edges, the latter highly dentate above inner margin; the orbicular ochreous with brown centre; the reniform leaden grey, with ochreous inner edge; the claviform very large, with black outline and a pale dentate patch beyond it; a crenulate postmedial line; an ochreous submarginal line very highly dentate at centre and with some dark suffusion inside it. Hind wing fuscous brown, with the cilia whitish. Underside with cell-spot and postmedial line.

Hab. Kashmir (*McArthur*). *Exp.* 42 millim. Type in coll. Leech.

1679. **Hadena consanguis,** *Guen. Noct.* ii, p. 97 ; *C. & S.* no. 2050.
Apamea undicilia, *Wlk. Cat.* ix, p. 251.
Hadena media, *Wlk. Cat.* xi, p. 756 ; *C. & S.* no. 1939.
Apamea latifasciata, *Moore, P. Z. S.* 1881, p. 345 ; *C. & S.* no. 2054.
Apamea viriata, *Swinh. P. Z. S.* 1885, p. 450 ; *C. & S.* no. 2063.
Apamea cana, *Hmpsn. Ill. Het.* viii, p. 79, pl. 145, fig. 8.

Differs from *trifolii* in the pale clothing of the head, thorax, and abdomen being mixed with dark hairs. Fore wing much suffused with fuscous, especially the medial area and beyond the submarginal line, which is indistinct and with the W-mark not very prominent. Hind wing scarcely paler at base.

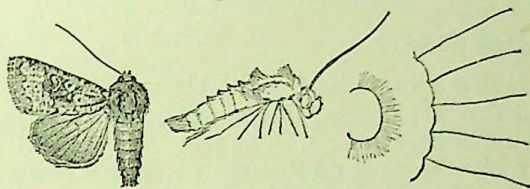



Fig. 123.—*Hadena consanguis*, ♂. 1/1.

The form *cana* from the Nilgiris is ochreous or pinkish ochreous, with the dark suffusion of fore wing confined to round the reniform; the hind wing paler. In *media* and *latifasciata*=*viriata* the head and thorax are dark red-brown; fore wing with the suffused areas dark red-brown, the pale area with a reddish tinge, the area beyond the postmedial line prominently pale with some reddish dentate marks on it: in the latter, from N.W. India and Bombay, the hind wing is suffused with fuscous, in the former, from Canara and the Nilgiris, white with a dark marginal line.

Hab. Throughout Peninular India and Ceylon. *Exp.* 34–38 millim.

1680. **Hadena nigrocuprea,** *Moore, P. Z. S.* 1867, p. 52; *C. & S.* no. 2077.

♂. Head, thorax, and fore wing very dark red-brown; the last with the usual transverse lines very indistinct; the orbicular and reniform large and indistinct, the latter with two white specks at its lower extremity; the claviform with black outline; four white specks on costa towards apex. Abdomen and hind wing fuscous.

Hab. Sikhim. *Exp.* 34 millim.

*1681. **Hadena? hastata,** *Moore, Lep. Atk.* p. 130, pl. 4, fig. 20 *C. & S.* no. 1936.

Red-brown. Fore wing with a prominent grey-edged sinuous antemedial black line, double below the cell; orbicular and reniform with black outlines; a black streak below the cell recurved at extremity; a curved postmedial pale-edged crenulate line; a marginal series of black specks. Hind wing white with a reddish tinge; an indistinct cell-spot.

Hab. Sikhim. *Exp.* 33 millim.

1682. **Hadena mediana**, *Moore, P. Z. S.* 1881, p. 332; *C. & S.* no. 1776.

Ochreous white. Abdomen slightly fuscous. Fore wing irrorated with dark scales; a black subbasal line; minutely dentate ante- and postmedial lines, the former oblique, the latter excurved beyond the cell, the area between them brown, with the orbicular and reniform grey and conjoined; a marginal series of dark specks. Hind wing fuscous; the cilia whitish. Underside with cell-spot and postmedial series of specks; both wings with marginal series of specks.

Hab. Simla. *Exp.* 34 millim.

1683. **Hadena elwesi**, n. sp.

♂. Violaceous grey, variegated with black. Fore wing with the medial area darkest; double subbasal and antemedial waved black lines; the orbicular, reniform, and a spot below the cell grey, the first with a black speck at centre; the postmedial line crenulate; the submarginal irregular line ill-defined; a marginal series of black specks. Abdomen and hind wing dark fuscous, the latter with the base of cilia pale. Underside with cell-spot and postmedial line.

Hab. Sikhim, 10,000 feet (*Elwes*). *Exp.* 36 millim. Type in coll. Elwes.

SECT. II. Fore wing rather longer and narrower.

A. *Antennæ of male minutely ciliated.*

1684. **Hadena dissecta**, *Wlk. Cat.* xxxii, p. 656; *Moore, Lep. Ceyl.* iii, pl. 146, fig. 7; *C. & S.* no. 2143.

Head and thorax dark brown. Abdomen fuscous, pale at extremity. Fore wing dark brown; the veins ochreous; the subbasal, ante- and postmedial double lines ochreous, the second curved, the last angled beyond the cell and met by a streak from apex; an ochreous doubly-curved submarginal line. Hind wing fuscous brown.

Hab. Sikhim; Ceylon. *Exp.* 45 millim.

1685. **Hadena costigera**, *Moore, P. Z. S.* 1881, p. 350; *C. & S.* no. 2022.

Head, thorax, and abdomen grey-brown; palpi dark at sides. Fore wing grey-brown, suffused with black and reddish brown; a broad pinkish-white costal fascia from the base to postmedial line; subbasal, ante- and postmedial waved double black lines, the last incurved at vein 3; orbicular and reniform grey, with whitish edges; claviform almost obsolete; the submarginal line pale, angled below the costa and with some dark marks on each side of it. Hind wing whitish; the outer area suffused with fuscous.

Hab. N.W. Himalayas; Khásis. *Exp.* 42 millim.

1686. **Hadena incisa**, *Moore, P. Z. S.* 1881, p. 344; *C. & S.* no. 2144.
Neuria auripicta, *Butl. Ill. Het.* vii, p. 53, pl. 127, fig. 3.

Head and thorax dark grey and fuscous. Abdomen pale fuscous. Fore wing dark grey, suffused with black; subbasal and antemedial waved white lines; the orbicular and reniform with whitish outline and fuscous centres, the latter large; a white streak on vein 2 and ochreous fascia on inner margin; the curved postmedial dark line lunulate, with some white on it below vein 2; a submarginal ochreous waved band angled below costa; a series of marginal black specks; cilia pale streaked. Hind wing fuscous, with traces of a postmedial line. Underside with prominent cell-spot and postmedial line to hind wing.

Hab. Dharmsála. *Exp.* 40 millim.

1687. **Hadena simillima**, *Moore, P. Z. S.* 1881, p. 344; *C. & S.* no. 2147.

♀. Differs from *incisa* in being redder. Fore wing with the subbasal, ante- and postmedial double lines not filled in with white; the reniform with an ochreous patch on its outer side; the submarginal line narrow, with dark lunules before it; cilia not pale streaked. Hind wing ochreous white, slightly suffused with fuscous towards outer margin. Underside without cell-spot on postmedial line.

Hab. N.W. Himalayas; Sikhim. *Exp.* 38 millim.

1688. **Hadena ferrisparsa**, n. sp.

Differs from *incisa* in the ground-colour of thorax and fore wing being pale grey-brown; the latter without the pale fasciæ on inner margin and vein 2; the orbicular larger; some rust-red before the submarginal line. Hind wing with the basal area whitish.

Hab. Simla; Dalhousie (*Harford*). *Exp.* 42 millim. Type in B. M.

1689. **Hadena nagaensis**, n. sp.

♀. Differs from *incisa* in the subbasal and antemedial lines of fore wing being dark; the pale fascia on inner margin and submarginal line tinged with rufous; no pale streak on vein 2; the orbicular large and dark; the reniform dark and S-shaped.

Hab. Nága Hills, 6000 feet (*Doherty*). *Exp.* 40 millim. Type in coll. Elwes.

1690. **Hadena poliostigma**, n. sp.

♀. Fuscous, suffused with grey. Fore wing with traces of subbasal and antemedial lines; the orbicular and reniform large and whitish; a black streak below the cell; indistinct postmedial and submarginal lines, the former excurved round the reniform,

the latter with a series of dentate marks on it. Hind wing brownish fuscous; the cilia whitish.

Hab. Sind Valley, Kashmir (*Leech*). *Exp.* 38 millim. Type in coll. Leech.

1691. **Hadena brassicæ**, *Linn. Syst. Nat.* p. 852; *Hübn. Eur. Schmett, Noct.* pl. 18, fig. 88; *C. & S.* no. 2069; *Buckler, Larvæ Brit. Butterf. Moths*, pl. 66, fig. 3 (larva).
Noctua albidilinea, *Haw. Lep. Brit.* p. 191.

Dark brown. Fore wing with indistinct double subbasal, ante- and postmedial dark lines, the last incurved at 3rd median nervure; orbicular and reniform stigmata grey, the latter with some white on it, a black dash between them; claviform black; an irregular pale submarginal line, the W-mark distinct; a series of marginal dark lunules; some pale costal specks. Hind wing fuscous brown; the cilia with a pale line through them.

Larva dark or pale green, with subdorsal and lateral darker specks and slight longitudinal and transverse lines; or dark purplish fuscous with short dark streaks, the ventral area green; a lateral series of white specks.

Hab. Europe; N.W. Himalayas; Punjab. *Exp.* 52 millim.

1692. **Hadena repetita**, *Butl. Ill. Het.* vii, p. 52, pl. 127, figs. 1, 2.

Differs from *brassicæ* in being ferruginous red. Fore wing reddish ochreous, irrorated and suffused with ferruginous; the lines very indistinct; orbicular and reniform fuscous, often white-edged; claviform small, ferruginous, and obsolescent; the submarginal line very indistinct, with the W-mark obsolescent. Hind wing reddish fuscous.

Hab. Dharmsála. *Exp.* 46 millim.

1693. **Hadena cuprina**, *Moore, P. Z. S.* 1881, p. 345, pl. 38, fig. 2; *C. & S.* no. 2051.

♀. Head, thorax, and abdomen brown. Fore wing dark cupreous red-brown; the usual transverse lines very indistinct; the orbicular and reniform greyish fuscous, the former oblique; three white specks on costa towards apex. Hind wing brownish fuscous.

Hab. Sikhim. *Exp.* 42 millim.

1694. **Hadena nigerrima**, *Warr. P. Z. S.* 1888, p. 302; *C. & S.* no. 2076 A.

Differs from *brassicæ* in being black-brown. Fore wings with the markings very indistinct; the orbicular, reniform, and claviform just traceable; two white specks at lower angle of cell; the waved submarginal line very indistinct, with the W-mark barely traceable. Hind wing dark fuscous.

Hab. Thandiáni, Punjab; Sikhim. *Exp.* 46–52 millim.

1695. **Hadena scotochlora,** *Koll. Hügel's Kaschmir*, iv, p. 482.
Polia stevensii, *Guen. Noct.* ii, p. 38; *C. & S.* no. 1766.

Head and thorax variegated grey and black; abdomen fuscous. Fore wing variegated grey and black, with double waved subbasal, antemedial, postmedial, and submarginal lines filled in with white; a single waved medial black line; the orbicular and reniform large and whitish with black outlines; a marginal series of quadrate black spots. Hind wing fuscous, with a whitish patch at anal angle; underside whitish, with cell-spot and indistinct postmedial line.

Hab. Thandiani, Punjab; Kashmir. *Exp.* 55 millim.

1696. **Hadena indica,** *Moore, P. Z. S.* 1867, p. 47; *C. & S.* no. 1769.

Differs from *scotochlora* in being much darker and browner; the orbicular and reniform without white edges; the former small and round.

Hab. "Bengal"; Nágas. *Exp.* 44 millim.

1697. **Hadena flavala,** *Moore, P. Z. S.* 1867, p. 46; *C. & S.* no. 1768.

Head and thorax white, irrorated with black; abdomen pale brown, with dark dorsal tufts and extremity. Fore wing brownish grey; some irregular basal black streaks; a slightly dentate antemedial and obliquely lunulate postmedial line; orbicular and reniform small black ring-spots, with whitish patches on the costa above them; an indistinct medial line angled below the costa; an irregularly dentate submarginal black line. Hind wing pale yellow; the basal and inner areas suffused with pale fuscous; a pale fuscous diffused submarginal band.

Hab. Sikhim. *Exp.* 40 millim.

1698. **Hadena knyvetti,** n. sp.

♂. Head whitish, black below; collar whitish; thorax greyish black; abdomen ochreous white, slightly ringed with fuscous, the extremity ochreous. Fore wing greyish fuscous, variegated with black; the subbasal black line on a large whitish patch, below which is a black lunule; the antemedial line oblique and white, with black outline; the orbicular large, white, and extending to the costa as a white patch; the reniform indistinct; the postmedial line slightly waved and inwardly oblique; the submarginal line white and broad, with white patches at apex and centre; a marginal series of black specks. Hind wing pale fuscous; underside with cell-spot and postmedial line.

Hab. Sikhim (*Knyvett*). *Exp.* 40 millim. Type in coll. Knyvett.

1699. **Hadena albiceps,** n. sp.

♂. Head and collar white; thorax dark chestnut, with a white patch on metathorax; abdomen fuscous black; legs black and

white. Fore wing white, slightly irrorated with black; a subbasal black line interrupted at middle; a short oblique antemedial line from the costa; a rectangular hoop-shaped mark on centre of inner margin; two medial black specks on the costa and a triangular patch before the apex; a comma-shaped mark beyond the cell; a series of black spots on the cilia. Hind wing smoky black, the cilia white; underside with indistinct cell-spot and postmedial line.

Hab. Sikhim (*Knyvett*). *Exp.* 34 millim. Type in coll. Knyvett.

B. *Antennæ of male fasciculated.*

1700. **Hadena mamestrina,** *Butl. Ill. Het.* vii, p. 59, pl. 128, fig. 5.

♂. Differs from *brassicæ* in the reniform being filled in with white; the submarginal line of fore wing consisting of white lunules on dark streaks. Hind wing pale fuscous.

Hab. Dharmsála. *Exp.* 50 millim.

1701. **Hadena fasciculata,** n. sp.

♂. Head, thorax, and abdomen red-brown; collar with pale fringe. Fore wing pale red-brown, variegated with grey; the subbasal and antemedial lines slightly waved; the orbicular and reniform large and grey, with black outlines, the latter with fuscous centre; claviform a large black lunule; traces of a medial line; the postmedial lunulate excurved line outlined with grey near the costa; the submarginal line pale and nearly straight, broadest towards the costa, and with black diffused marks on each side of it at middle, and inside it near costa and inner margin: a crenulate marginal line. Hind wing fuscous; a marginal grey line; the cilia rufous; underside with prominent cell-spot and sinuous postmedial line.

Hab. Sikhim (*Knyvett*). *Exp.* 54 millim. Type in coll. Knyvett.

C. *Antennæ of male heavily bipectinated.*

1702. **Hadena culta,** *Moore, P. Z. S.* 1881, p. 347; *C. & S.* no. 2072.

Dark purplish red-brown; a black line on collar. Fore wing with indistinct double subbasal and antemedial waved lines and postmedial dentate line; a short oblique golden striga with black outer edge below base of median nervure; a golden and black mark on claviform; the orbicular and reniform large and indistinct, the latter with golden and black at its lower extremity; a submarginal sinuous series of golden and black lunules; a marginal series of small black lunules. Abdomen and hind wing brown, the latter slightly suffused with grey; underside with lunule at end of cell and indistinct postmedial line.

Hab. Dalhousie. *Exp.* 58 millim.

SECT. III. Fore wing longer and narrower.

1703. **Hadena pannosa**, *Moore, P. Z. S.* 1881, p. 345; *id. Lep. Ceyl.* iii, pl. 147, fig. 1; *C. & S.* no. 2059.
Apamea sikkima, *Moore, Lep. Atk.* p. 109; *C. & S.* no. 2061.

Dark brown. Fore wing with the subbasal, ante- and postmedial double lines pale-centred, the second highly angled near inner margin, and with ochreous patches before it below the cell; the orbicular and reniform greyish; the claviform small; a diffused pale patch from beyond the postmedial line to outer angle; a prominent pale dentate apical patch. Hind wing fuscous; the cilia pale with a line through them.

The form *sikkima* is rather redder; the claviform larger; no pale patch beyond the postmedial line, and the apical patch obsolescent.

Hab. Sikhim; Nilgiris; Ceylon. *Exp.* 40–50 millim.

Genus SEMIOPHORA.

Semiophora, *Steph. Ill. Brit. Ent., Haust.* ii, p. 138 (1829).
Tæniocampa, *Guen. Ann. Soc. Ent. Fr.* viii, p. 477 (1839).

Type, *S. gothica*, Linn., from Europe.

Range. N. America, Europe, Japan, N.W. Himalayas.

Eyes hairy; head deeply inserted in thorax; proboscis fully developed; palpi porrect, extending beyond the frons, clothed with long hair below, and the third joint prominent; antennæ bipectinated in male; thorax evenly rounded; abdomen without tufts; tibiæ without spines, and clothed with long hair. Fore wing rather long and narrow.

1704. **Semiophora orthosioides**, *Butl. Ill. Het.* vii, p. 56, pl. 128, fig. 1.

Palpi very long; branches of antennæ long in male. Head and thorax clothed with grey and dark scales; abdomen pale brown. Fore wing pale brown irrorated with dark scales; traces of subbasal and antemedial and a more distinct curved medial line; a black spot at lower angle of cell; a pale submarginal line with some dark suffusion beyond it. Hind wing fuscous.

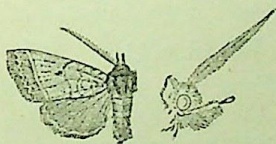



Fig. 124.
Semiophora orthosioides, ♂. ½.

Hab. Mandi, N.W. Himalayas. *Exp.* 30 millim.

1705. **Semiophora ferrosticta**, n. sp.

♂. Grey; antennæ and abdomen tinged with rufous. Fore wing slightly irrorated with fuscous; a fuscous streak on basal inner area; traces of a sinuous antemedial line; the orbicular and reniform large and indistinct, with ferruginous and dark brown

lower edges; a diffused medial fuscous band passing between the stigmata; an indistinct crenulate postmedial line; an indistinct submarginal line with prominent ferruginous and dark specks on it; a marginal series of dark specks. Hind wing pale fuscous; the cilia whitish.

Hab. Kashmir (*McArthur*). *Exp.* 42 millim. Type in coll. Leech.

1706. **Semiophora castaneipennis**, n. sp.

♂. Bright chestnut. Fore wing irrorated with black specks and strigæ; traces of subbasal and antemedial lines; the orbicular and reniform indistinct, with a chestnut patch between them and before the orbicular; an indistinct curved postmedial line with interrupted rufous marks beyond it. Hind wing fuscous; the cilia rufous.

Hab. Kashmir (*McArthur*). *Exp.* 42 millim. Type in coll. Leech.

Genus BOMBYCIA.

Bombycia, *Steph. Ill. Brit. Ent., Haust.* iii, p. 57 (1829).
Cleoceris, *Boisd. Ind. Meth.* p. 93 (1840).

Type *B. viminalis*, Fabr., from Europe.
Range. Europe; Himalayas.

Eyes naked and lashed; proboscis fully developed; palpi obliquely porrect and hairy; thorax and abdomen without tufts; tibiæ without spines. Fore wing long and narrow, the apex somewhat acute.

The typical species (Sect. I.) has the antennæ of male bipectinated, with short branches.

SECT. II. Antennæ of male with fasciculated cilia; palpi with the 3rd joint minute.

1707. **Bombycia persimilis**, n. sp.
Raphia viminalis, *Butl.* (*nec Fabr.*) *Ill. Het.* vii, p. 11.

Brown, with a slight reddish tinge. Fore wing with a black streak from the base below median nervure; the subbasal and antemedial double waved lines indistinct; the orbicular and reniform large and pale with black outlines; claviform, a large black lunule; the postmedial double waved line incurved to lower angle of cell; the submarginal irregular line pale; cilia with slight pale streaks. Hind wing with cell-spot and faint postmedial line below.

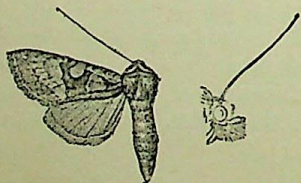



Fig. 125.
Bombycia persimilis, ♂. ½.

Hab. Dharmsála (*Hocking*). *Exp.* 36 millim. Type in B. M.

1708. **Bombycia leucocera**, n. sp.

♀. Brownish grey. Fore wing with short dark subbasal line; sinuous antemedial line interrupted by the ochreous claviform streak; the orbicular and reniform white with black edges, the former small, the latter narrow and angled inwards on median nervure; a slightly crenulate postmedial line, very much bent outwards below costa; a pale, nearly straight, submarginal line, with a series of black marks on it.

Hab. Sind Valley, Kashmir (*Leech*). *Exp.* 46 millim. Type in coll. Leech.

1709. **Bombycia meterythra**, n. sp.

♂. Head and thorax pale, suffused with pink; abdomen ochreous. Fore wing pale suffused with brown, rufous, and pink, the medial area reddish; an indistinct subbasal line; a sinuous oblique antemedial line; a curved crenulate postmedial line and indistinct dentate submarginal line with rufous suffusion inside it; the orbicular and reniform large, prominent, and black, with pink centres. Hind wing bright red; the cilia ochreous.

Hab. Murree. *Exp.* 36 millim. Type in B. M.

SECT. III. Antennæ bipectinated, the branches long; palpi with the 3rd joint long and porrect.

1710. **Bombycia rubida**, n. sp.

♂. Antennæ fulvous; head, thorax, and abdomen greyish red. Fore wing greyish red; a large chestnut patch at end of cell surrounding the indistinct reniform; some dark suffusion on centre of inner margin; an almost straight pale and chestnut submarginal line. Hind wing reddish fuscous; cilia of both wings rufous. Underside with cell-spot and traces of a postmedial line to both wings.

Hab. Sikhim, 10,000 feet (*Elwes*). *Exp.* 47 millim. Type in coll. Elwes.

Genus EUPLEXIA.

Euplexia, *Steph. Ill. Brit. Ent., Haust.* iii, p. 3 (1829).
Trachæa, *Hübn. Verz.* p. 219 (1818), non descr.
Luperina, *Boisd. Ind. Meth.* p. 113 (1840).
Prospalta, *Wlk. Cat.* xiii, p. 1114 (1857).
Triphænopsis, *Butl. A. M. N. H.* (5) i, p. 163 (1878).
Chutapha, *Moore, Lep. Atk.* p. 131 (1882).
Karana, *Moore, Lep. Atk.* p. 106.
Chandata, *Moore, Lep. Atk.* p. 113.
Eurabila, *Butl. Ill. Het.* vii, p. 39 (1889).

Type, *E. lucipara*, Linn., from Europe.

Range. Nearctic and Palæarctic regions; throughout India, Ceylon, and Burma; Fiji.

Eyes naked, with or without lashes; proboscis fully formed; palpi upturned, the second joint not reaching vertex of head and fringed with hair, the third prominent. Thorax with a slight tuft of outspreading hair behind the collar and paired tufts on metathorax. Abdomen with dorsal tufts on proximal segments; tibiæ without spines. Fore wing with the cilia crenulate.

SECT. I. Antennæ of male quite simple.

1711. **Euplexia nubilata**, n. sp.

♂. Head, thorax, and abdomen clothed with dark and grey-brown scales. Fore wing reddish brown; the basal area as far as the antemedial line and the area between the medial and sub-marginal lines clouded with glossy fuscous; double subbasal, antemedial, medial, and postmedial, and single submarginal lines, the first three waved, the two latter lunulate; orbicular round, with dark centre; reniform a dark lunule. Hind wing whitish, with traces of fuscous postmedial and submarginal lines; apical area suffused with fuscous; underside with prominent cell-spot and postmedial line.

Hab. Sikhim, 6000 feet (*Möller*). *Exp*. 46 millim. Type in coll. Elwes.

SECT. II. Antennæ ciliated in male.

A. *Hind wing not yellow*.

1712. **Euplexia indistans**, *Guen. Noct.* ii, p. 87; *C. & S.* no. 1937.
Hadena inextricans, *Wlk. Cat.* xv, p. 1729.
Hadena distans, *Moore, Lep. Atk.* p. 130; *C. & S.* no. 1935.

Pale reddish brown. Fore wing with indistinct, waved, double subbasal, ante- and postmedial dark lines; the orbicular and reniform indistinct and often filled in with white; a submarginal series of lunules. Hind wing pale fuscous. Underside with the basal half of both wings suffused with ferruginous in male.

Hab. N.W. Himalayas, Bombay, and throughout S. India and Ceylon. *Exp*. 34 millim.

1713. **Euplexia niveiplaga**, *Wlk. Cat.* xi, p. 593; *C. & S.* no. 1940.
Hadena confundens, *Wlk. Cat.* xi, p. 757.
Agrotis quadrisigna, *Moore, P. Z. S.* 1881, p. 350; *C. & S.* no. 1998.
Agrotis placida, *Moore, Lep. Atk.* p. 117, pl. iv, fig. 19; *C. & S.* no. 1995.
Hadena siderifera, *Moore, P. Z. S.* 1881, p. 357; *C. & S.* no. 1942.
Mamestra terranea, *Butl. Ill. Het.* vii, p. 53, pl. 127, fig. 10.

Differs from *indistans* in having no ferruginous suffusion on the underside of the male.

In the form *confundens* = *quadrisigna* there are no white specks on the reniform, but usually a brick-red speck; *siderifera*, *terranea*, and *niveiplaga* are darker red-brown, the first with white specks on the outer edge of reniform, the second with a white spot on it also, the third with the white spot only.

Hab. N.W. Himalayas; Sikhim; Nilgiris. *Exp.* 36–52 millim.

1714. **Euplexia adjuncta**, *Moore, P. Z. S.* 1881, p. 357; *C. & S.* no. 1931.

♀. Differs from *niveiplaga* in being greyer. Fore wing with a waved black streak from the base below median nervure; the antemedial line more obliquely waved, the postmedial more excurved, a black streak between them through the claviform; the orbicular and reniform with grey and black outlines; the submarginal lunules more dentate.

Hab. Dalhousie. *Exp.* 52 millim.

1715. **Euplexia flavistigma**, *Moore, P. Z. S.* 1867, p. 50; *C. & S* no. 2053.

Apamea obliquiorbis, *Moore, Lep. Atk.* p. 109; *C. & S.* no. 2058.
Hadena constellata, *Moore, Lep. Atk.* p. 130, pl. 4, fig. 21; *C. & S.* no. 1934.

Differs from *niveiplaga* in the head, thorax, and abdomen being pale brown; the basal half of the fore wing very dark red-brown, the outer half pale red-brown; orbicular brick-red; reniform ochreous, without white specks, and with some brick-red suffusion between it and the postmedial line, which is incurved to lower angle of cell; the submarginal line pale and irregularly dentate. Hind wing with the cilia ochreous.

The form *constellata* has one white spot on the antemedial line of the fore wing, a white blotch on the reniform surrounded by a few specks, and a series of white specks on the postmedial line; other specimens have only the white blotch on the reniform.

Hab. Sikhim. *Exp.* 40–52 millim.

1716. **Euplexia opposita**, *Wlk. Cat.* xxxii, p. 667; *Hmpsn. Ill. Het.* ix, pl. 162, fig. 12; *C. & S.* no. 2078.

Differs from *niveiplaga* in being very dark red-brown or black-brown. Fore wing with the orbicular and reniform stigmata large, the latter with an ochreous or brick-red lunule on it; a series of submarginal black dashes with ochreous specks on them; a marginal series of black and ochreous specks. Hind wing whitish, suffused with fuscous brown towards outer margin.

Hab. Aden; Simla; Nilgiris; Ceylon. *Exp.* 40 millim.

1717. **Euplexia sodalis,** *Butl. A. M. N. H.* (5) i, p. 83; *id. Ill. Het.* ii, pl. 29, fig. 2.
Apamea basalis, *Moore, P. Z. S.* 1881, p. 346; *C. & S.* no. 2049.
Apamea denticulosa, *Moore, Lep. Atk.* p. 109, pl. 4, fig. 13; *C. & S.* no. 2052.
Apamea strigidisca, *Moore, P. Z. S.* 1881, p. 346, pl. 38, fig. 9; *C. & S.* no. 2062.

Differs from *niveiplaga* in being redder; the double lines of the fore wing less distinct; the postmedial line recurved to lower angle of cell; the orbicular and reniform paler, the latter without white spots on it; the claviform smaller; the submarginal line irregularly waved with dark patches beyond it below the apex and at outer angle.

A variety has the basal inner area of fore wing suffused with greyish white as far as the antemedial line; the area between the postmedial and submarginal lines greyish white from the inner margin to near costa, where it is bent outwards to apex; reniform with a large white patch on it; the form *basalis* has the patagia and basal half of fore wing suffused with purplish black; *strigidisca* has black streaks at base of fore wing on median nervure, vein 1 and inner margin, and a black streak crossing the submarginal line at centre.

Hab. Japan; Dharmsála; Simla; Sikhim. *Exp.* 42–46 millim.

1718. **Euplexia lignea,** *Butl. Ill. Het.* vii, p. 40, pl. 128, fig. 6.

Head grey; thorax vinous, with an ochreous streak on vertex; abdomen ochreous. Fore wing ochreous suffused with chestnut; the costa greyish; double waved subbasal, antemedial, postmedial, and submarginal lines; the orbicular and reniform narrow, with deep chestnut edges and pale chestnut centres; the claviform chestnut; a series of black specks on the veins beyond the postmedial line; a blackish patch on the outer margin below the apex and at outer angle. Hind wing ochreous, slightly suffused with fuscous.

Hab. Dharmsála; Sultanpur. *Exp.* 46 millim.

1719. **Euplexia albiflexura,** *Wlk. Cat.* xi, p. 726; *C. & S.* no. 2067.

♂. Differs from *niveiplaga* in having the subbasal, ante- and postmedial lines less waved and paler; the orbicular and reniform stigmata narrower, the former oblique, the latter with white specks beyond it on the discocellulars; the claviform indistinct and narrow; the submarginal line whitish, dentate below the costa and with three prominent black streaks on it at centre.

Hab. "India." *Exp.* 38 millim.

1720. **Euplexia didyma,** *Esp. Schmett. Eur.* ii. pt. iv, p. 378, pl. 126 (*Noct.* 47), fig. 7.
Noctua laucea, *Esp. t. c.* pl. 174, fig. 3.
Noctua nictitans, *Esp. t. c.* pl. 126, fig. 6 (*nec Linn.*).

Noctua leucostigma, *Esp. t. c.* pl. 159, fig. 7.
Apamea moderata, *Ev. Bull. Soc. Nat. Mosc.* xvi, 1843, p. 547.
Apamea oculea, *Butl.* (*nec Linn.*), *Ill. Het.* vii, p. 9.

Differs from *indistans* in the fore wing having the inner area and that between the postmedial and submarginal lines usually paler; the orbicular and reniform smaller, the latter often spotted with white; a dark postmedial series of specks on the nervules; a waved instead of lunulate submarginal line.

Hab. Europe; Dharmsála. *Exp.* 32 millim.

1721. **Euplexia conducta,** *Wlk. Cat.* x, p. 296.
Perigea centralis, *Wlk. Cat.* xi, p. 734; *Moore, Lep. Ceyl.* iii, pl. 147, figs. 2, 2*a* (larva); *C. & S.* no. 2099.
Perigea illecta, *Wlk. Cat.* xxxii, p. 684.
Perigea inexacta, *Wlk. Cat.* xxxii, p. 682.
Perigea galaxia, *Butl. P. Z. S.* 1883, p. 159; *C. & S.* no. 2100.
Perigea canorufa, *Wlk. Cat.* xxxii, p. 683.
Celæna serva, *Wlk. Cat.* xv, p. 1689.
Hadena leonina, *Wlk. Cat.* xxxiii, p. 735.
Hadena pauperata, *Wlk. Cat.* xv, p. 1727.
Hadena funesta, *Wlk. Cat* xxxiii, p. 740.
Hadena spargens, *Wlk. Cat.* xxxiii, p. 739; *C. & S.* no. 1943.
Hadena taprobanæ, *Feld. Reis. Nov.* pl. 110, fig. 3.
Perigea apameoides, *C. & S.* no. 2098 (*nec Guen.*).
Mamestra dolorosa, *Wlk. Cat.* xxxii, p. 667; *C. & S.* no. 2074.

Fuscous brown. Fore wing with the subbasal, ante-, postmedial, and submarginal lines indistinct; the orbicular and reniform indistinct, the latter edged with white specks; some white specks on costa towards apex, and a series on outer margin. Hind wing slightly paler at base; the cilia pale. Underside with an obscure postmedial line.

The form *dolorosa* is smoky black, with the thoracic tufts sometimes brown; the lines of fore wing reduced to specks; the white spots on reniform more developed. Hind wing whitish, with broad fuscous margin.

Larva smooth, pale green, with the anal somite conical; dorsal and lateral series of purple-brown blotches speckled with white; a sublateral series of white dots. Food-plant, *Acanthads.*

Pupa greenish with reddish somital bands.

Hab. Throughout India, Ceylon, and Burma; Andamans; Fiji. *Exp.* 36–38 millim.

1722. **Euplexia albomaculata,** *Moore, P. Z. S.* 1867, p. 52; *C. & S.* no. 2083.
Prospalta stellata, *Moore, Lep. Atk.* p. 111; *C. & S.* no. 2085.

Differs from *conducta* in being cupreous brown; the tuft on metathorax white. Fore wing with the subbasal and antemedial lines whitish; the reniform, the specks on costa, the marginal and

cilial specks pure white. Hind wing cupreous fuscous, the cilia whitish.

In the form *stellata* the tuft behind the collar is tinged with white; fore wing with clusters of white spots at base, round the orbicular, which is white, and round the reniform; series of white ante- and postmedial, submarginal, marginal, and cilial specks; some white on inner margin near base.

Hab. Sikhim. *Exp.* 33–42 millim.

1723. **Euplexia leucospila,** *Wlk. Cat.* xiii, p. 1114; *C. & S.* no. 2084.

♂. Differs from the form *stellata* of *albomaculata* in the palpi having the 2nd and 3rd joints white-tipped; the orbicular without white specks round it; the reniform circular, with six specks round it; the postmedial series more curved. Hind wing with a cilial series of white specks.

The Tenasserim specimen is very much smaller than the typical orm.

Hab. Sikhim; Tenasserim. *Exp.* 26–42 millim.

1724. **Euplexia albirena,** *Moore, P. Z. S.* 1867, p. 53; *C. & S.* no. 2068.

♂. Differs from *conducta* in being rust-red. Fore wing more produced and acute at apex; the reniform with some white on its outer edge and a prominent white spot on its lower extremity. Hind wing dark brown; underside with cell-spot and postmedial line.

Hab. Sikhim; Calcutta. *Exp.* 46 millim.

1725. **Euplexia subcurva,** *Wlk. Cat.* xi, p. 592; *Moore, Lep. Ceyl.* iii, pl. 145, fig. 8; *C. & S.* no. 2043.
Hadena postica, *Wlk. Cat.* xi, p. 594.

Dark red-brown. Fore wing narrow; the subbasal, ante- and postmedial double lines very indistinct, the last incurved at vein 4; the submarginal line indistinctly lunulate, with some dark dashes on it at centre; the orbicular, reniform, and claviform indistinct. Some specimens have a black patch on the lobe of inner margin, and the lower part of the double postmedial lines filled in with black. Hind wing brownish fuscous; the basal area pale; underside whitish, with prominent cell-spot and broad marginal band.

Hab. Ceylon. *Exp.* 34 millim.

1726. **Euplexia semifascia,** *Wlk. Cat.* xxxiii, p. 737; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 11; *C. & S.* no. 1961.
Euplexia cuprea, *Moore, P. Z. S.* 1874, p. 578; *C. & S.* no. 1957.

Dark red-brown. Fore wing with the subbasal, ante- and postmedial double waved lines oblique, the two latter approaching each

other at inner margin and with the area between them dark, a dark patch beyond the first above inner margin; the orbicular large,

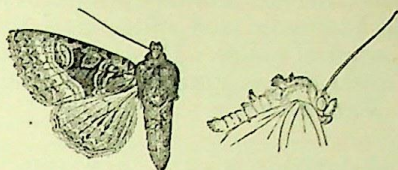



Fig. 126.—*Euplexia semifascia*, ♂. ½.

indistinct, and fuscous; the reniform large, whitish, ill-defined, and with dark centre; an indistinct waved submarginal line, slightly angled below the costa. Abdomen and hind wing fuscous, the latter with slight pale and dark marks on vein 2.

Closely allied to *E. lucipara*, Linn., from Europe.

Hab. N.W. Himalayas; Satára; Nilgiris. *Exp.* 38 millim.

1727. **Euplexia metallica**, *Wlk. Cat.* xxxii, p. 666; *C. & S.* no. 2076.

Differs from *semifascia* in being brighter red-brown; abdomen tinged with ochreous. Fore wing suffused with purple; a rufous line on inner margin; the ante- and postmedial lines further apart at inner margin, the former more waved, the latter more curved; the submarginal line more prominent. Hind wing with the cilia white-tipped.

In one specimen the palpi are whitish in front; the ante- and postmedial lines straighter.

Hab. Sikhim; Bombay. *Exp.* 45 millim.

1728. **Euplexia discisignata**, *Moore, P. Z. S.* 1867, p. 57, pl. 6, fig. 9; *C. & S.* no. 1958.
Euplexia striatovirens, *Moore, P. Z. S.* 1867, p. 58; *C. & S.* no. 1962.

Differs from *semifascia* in the base of the fore wing being yellowish green; the antemedial line yellow-green and evenly curved; the inner area between it and the postmedial line yellow-green. Hind wing with the inner area whitish; cilia of both wings rufous.

In *discisignata* the basal and postmedial areas of the fore wing are pale, and black marks come out strongly before the orbicular and between it and the reniform; in *striatovirens* the basal and postmedial areas are brown, the latter with an ill-defined pale band from costa before apex to vein 5, and no black marks round the stigmata.

Hab. Sikhim. *Exp.* 35 millim.

1729. **Euplexia albiplaga.**
Euplexia albonota, *Hmpsn. Ill. Het.* ix, p. 92, pl. 161, fig. 14 (præocc.).

♂. Differs from *semifascia* in the head and thorax being black and pale brown; the abdomen fuscous. Fore wing with the ground-colour black; the reniform very prominent and white; the area between the postmedial and submarginal lines whitish; a series of white marginal points. Hind wing smoky black, with black and white marks on vein 2, and the cilia whitish.

Hab. Ceylon. *Exp*. 40 millim.

1730. **Euplexia chalybeata,** *Moore, P. Z. S.* 1867, p. 64; *C. & S.* no. 2271.

♂. Dark red-brown. Fore wing irrorated with purplish scales; the subbasal, antemedial, postmedial, and submarginal waved lines purplish and somewhat indistinct; the orbicular and reniform indistinct, the latter with some ochreous round its upper portion; a series of purplish marks on outer margin. Hind wing reddish fuscous, with some indistinct marginal purplish marks. Underside with a broad marginal purplish band.

Hab. Sikhim. *Exp*. 62 millim.

1731. **Euplexia stoliczkæ,** *Feld. Reis. Nov.* pl. 109, fig. 32; *C. & S.* no. 2080.

Head and thorax brown, suffused with olive-green; abdomen fuscous. Fore wing violaceous grey-brown, suffused with olive-green; the subbasal, ante- and postmedial double waved lines indistinct; the stigmata large and indistinct; the submarginal waved line indistinct; three pale specks on costa towards apex; a marginal series of lunules. Hind wing dark fuscous; the bases of cilia ochreous; underside with cell-spot and irregularly waved postmedial line.

Hab. Dalhousie; Thandiáni, Punjab. *Exp*. 52 millim.

1732. **Euplexia melanospila,** *Koll. Hügel's Kaschmir,* iv, p. 480.

Eurois auriplena, *Wlk. Cat.* xi, p. 557; *Moore, Lep. Ceyl.* iii, pl. 148, fig. 2; *C. & S.* no. 1925.

Trachea atriplicis, *Koll.* (*nec Linn.*) *Hügel's Kaschmir,* iv, p. 479.

Head and thorax olive-green and dark red-brown; antennæ rufous in male. Fore wing dark green, suffused with dark brown, and with purplish grey on the double lines and before the submarginal line; some specimens with golden-green marks near base, round the stigmata, and on submarginal line; subbasal, ante- and postmedial waved black lines, the two latter approaching each other towards inner margin; orbicular and reniform green, with more or less pronounced dark centres; claviform replaced by a quadrate white mark of varying size and shape, and often extending up into the cell; the submarginal line indistinct, irregularly waved, and black, becoming white near inner margin. Hind wing with the basal half white or suffused with fuscous; the outer half fuscous black.

Hab. Throughout India and Ceylon. *Exp*. 58 millim.

1733. **Euplexia aurigera**, *Wlk. Cat.* xv, p. 1721; *C. & S.* no. 1946.
Hadena megastigma, *Wlk. Cat.* xxxiii, p. 738; *C. & S.* no. 1947.
Berrhœa olivacea, *Moore, P. Z. S.* 1881, p. 357; *C. & S.* no. 1948.

Differs from *melanospila* in the thoracic crests being red-brown; the orbicular and reniform being joined by a bar on median nervure and with a smaller white spot below them; the postmedial band red-brown.

Hab. Sikhim. *Exp.* 42–50 millim.

1734. **Euplexia albinota**, *Moore, P. Z. S.* 1867, p. 58; *C. & S.* no. 1945.

Differs from *aurigera* in having no red-brown tints. Fore wing with blue-grey scales on the transverse lines; the submarginal line much more regular; the marginal black spots absent.

Hab. Sikhim. *Exp.* 34 millim.

1735. **Euplexia auroviridis**, *Moore, P. Z. S.* 1867, p. 59, pl. 6, fig. 11; *C. & S.* no. 1949.
Dianthœcia nivescens, *Butl. Ill. Het.* vii, p. 58, pl. 128, fig. 2.
Hadena albidisca, *Moore, P. Z. S.* 1867, p. 59, pl. 6, fig. 17; *C. & S.* no. 1932.

Head and thorax chestnut, with a greenish tinge; palpi black at sides; abdomen fuscous, the dorsal tufts chestnut. Fore wing sap-green, suffused with black, especially on basal inner area and medial and marginal areas; the subbasal, ante- and postmedial, and submarginal black lines edged with white, lunulate and dentate; a marginal series of white and black lunules; the orbicular, reniform, and claviform defined by small white lunules on their edges; in the form *albidisca=nivescens* a large pure white patch occupies the reniform and extends to the claviform. Hind wing fuscous, with traces of a cell-spot and postmedial line, which are prominent on underside.

A form from the Nágas has the green mostly replaced by golden yellow. Fore wing with the area between the subbasal and antemedial lines whitish; the patch of white on disk very large and defined below by black; more white on outer margin.

Hab. Dharmsála; Bengal; Nágas; Nilgiris. *Exp.* 32–34 millim.

1736. **Euplexia literata**, *Moore, Lep. Atk.* p. 124; *C. & S.* no. 1952.

♂. Differs from *auroviridis* in the orbicular and reniform stigmata being quadrate, and forming, with a band in the internomedian interspace, a prominent Y-shaped green mark; the double lines filled in with green; the postmedial line straighter, more erect, and less lunulate.

Hab. Sikhim. *Exp.* 32 millim.

1737. **Euplexia calamistrata**, *Moore, Lep. Atk.* p. 124, pl. 4, fig. 23; *C. & S.* no. 1950.

♂. Head and thorax white, with a few brown and black scales; abdomen pale fuscous brown; dorsal tufts tipped with black. Fore wing pale olive; traces of a double subbasal line, with black patches beyond it below median nervure; the antemedial line white and diffused; the orbicular, reniform, and claviform white with black outline; the postmedial line indistinct, excurved beyond cell, and white towards inner margin; an indistinct white submarginal line with black suffusion on it. Hind wing pale fuscous; underside with cell-spot and postmedial line; a marginal pale band to both wings.

Hab. Sikhim. *Exp.* 36 millim.

1738. **Euplexia aurantiaca**, n. sp.

Differs from *auroviridis* in the head, thorax, and fore wing being golden-brown instead of green; the last with the silvery-white lines more prominent; two antemedial lines, the first dentate, the second waved; the postmedial line more crenulate, the suffused areas deeper golden-brown instead of black.

Hab. Sikhim 8000 feet (*Möller*). *Exp.* 34 millim. Type in coll. Elwes.

1739. **Euplexia stellifera**, *Moore, Lep. Atk.* p. 123; *C. & S.* no. 1954.

♂. Head, thorax, and fore wing brownish ochreous, which has probably been olive-green in the fresh state, irrorated with black scales; abdomen fuscous brown. Fore wing with the subbasal, antemedial, postmedial, and submarginal lines single and consisting of disconnected white strigæ; a white line on the discocellulars; ill-defined antemedial, medial, postmedial, and submarginal broken and diffused black bands; a marginal series of black lunules. Hind wing dark fuscous; underside fuscous, with indistinct postmedial line to both wings.

Hab. Sikhim. *Exp.* 44 millim.

1740. **Euplexia lagenifera**, *Moore, Lep. Atk.* p. 114; *C. & S.* no. 2094.

♂. Head, thorax, and abdomen bright chestnut; collar with grey lines, and tegulæ grey fringed with chestnut. Fore wing pale pinkish chestnut; a double subbasal line; a slightly sinuous antemedial double line filled in with ochreous; a similar postmedial line dentate below the costa, excurved round end of cell and approaching the antemedial line towards inner margin, the area between the two lines bright chestnut; the orbicular a diffused pinkish patch joined to the costa and to the lower part of reniform, which has a dark centre; a submarginal dentate indistinct line

with a black spot on it below the costa. Hind wing fuscous, the costa and outer margin reddish. Underside reddish ochreous, with black cell-spot and postmedial line to each wing.

Hab. Sikhim. *Exp.* 36 millim.

1741. **Euplexia plumbeola**, n. sp.

♂. Head and thorax slaty blue-grey; abdomen fuscous. Fore wing blue-grey; the area between the subbasal and antemedial lines ochreous; reniform white and ochreous; the postmedial line treble and excurved beyond the cell; an irregular submarginal yellow-brown line or band. Hind wing pale fuscous or whitish, with the outer area grey; some dark suffusion on vein 2, and a white submarginal waved line from vein 4 to anal angle. Underside of fore wing with a black lunule at end of cell on a black-speckled white patch; hind wing white and black-speckled, with a black cell-spot and waved postmedial line.

Hab. Sikhim (*Möller*). *Exp.* 44 millim. Type in coll. Elwes.

1742. **Euplexia gemmifera**, *Wlk. Cat.* xii, p. 834; *C. & S.* no. 1963.
Karana similis, *Moore, P. Z. S.* 1888, p. 407; *Butt. Ill. Het.* vii, pl. 128, fig. 8.
Karana decorata, *Moore, Lep. Atk.* p. 107; *C. & S.* no. 1772.

Head and thorax clothed with black and white scales; collar and tegulæ with some metallic blue-green scales; abdomen dark brown. Fore wing black, with streaks of blue-green scales on costa, median nervure, interno-median interspace, and inner margin; the subbasal and antemedial double lines filled in with white, the latter sending a tooth towards base in interno-median interspace; the orbicular small and pure white; reniform quadrate, white with two black spots on it, and with white marks on the costa above it; claviform a white lunule; a submarginal series of black spots edged by metallic blue-green lunules, with some ferruginous beyond them. Hind wing white, the costal and outer areas suffused with fuscous; a faint postmedial line.

The form *similis* has the markings of the fore wing silvery white instead of creamy and the claviform small; *decorata* has the whole hind wing black except the white points and a patch towards anal angle, on the cilia.

Hab. Dharmsála; Sikhim; Poona; Nilgiris. *Exp.* 40 millim.

1743. **Euplexia albovittata**, *Moore, P. Z. S.* 1867, p. 57, pl. 6, fig. 16; *C. & S.* no. 1956.
Euplexia sinuata, *Moore, Lep. Atk.* p. 125, pl. 4, fig. 25; *C. & S.* no. 1960.

Head and thorax black; tips of palpi and basal tufts of antennæ white; the tuft on metathorax white, with rufous edges; abdomen black, whitish at base. Fore wing with the basal area black-

brown, its edge oblique and toothed near inner margin; a broad irregular white band, narrow at costa; a broad medial dark band, with the costal half blue-black, the orbicular and reniform being slightly indicated by white lines, its inner half red-brown and its inner and outer edges angled in interno-median interspace; the outer area white, irrorated with fuscous, with traces of a rufous postmedial band from costa to vein 5; a broad marginal blue-black band from costa to vein 2, its lower part with traces of dentate pale marks. Hind wing fuscous, the basal and inner areas whitish; some white and black marks on vein 2 towards outer margin. Underside of fore wing with a prominent white cell-spot.

The Japanese form has more reddish suffusion on fore wing, and *sinuata* from Sikhim has the white markings very much reduced.

Hab. Japan; Sikhim. *Exp.* 44 millim.

1744. **Euplexia distorta,** *Moore, P. Z. S.* 1881, p. 354, pl. 38, fig. 18; *C. & S.* no. 1959.

Head black, the extremity of palpi and basal joint of antennæ white; collar black, broadly fringed with white; thorax black, with broad white stripes on vertex and patagia; abdomen fuscous black, whitish at base; legs black and white. Fore wing white, with broad irregular basal and subbasal black bands, conjoined at inner margin; a large triangular black patch on centre of costa; a very irregular black band from the lower angle of cell to inner margin; a spot beyond the cell; a triangular patch on the costa before apex; an irregular submarginal band, not reaching the costa or inner margin, with its outer edge dentate. Hind wing white, with an apical black patch continued towards anal angle as a series of conjoined spots.

Hab. Sikhim. *Exp.* 36 millim.

B. *Hind wing yellow.*

a. *Palpi with the 3rd joint reaching vertex of head.*

1745. **Euplexia inepta,** *Butl. Ill. Het.* vii, p. 55, pl. 127, figs. 6, 7.

Dark brown; abdomen ochreous at extremity. Fore wing with the subbasal and antemedial double waved lines indistinct; the orbicular indistinct, with black outline; the reniform ochreous-brown; the claviform and postmedial and submarginal lines indistinct, the second excurved beyond the cell. Hind wing pale yellow; the basal area and area below median nervure suffused with fuscous; an indistinct postmedial line; a broad fuscous marginal band.

Some specimens have the thorax and outer area of fore wing pale, the reniform white.

Hab. Dharmsála. *Exp.* 46 millim.

1746. **Euplexia diminuta**, *Butl. Ill. Het.* vii, p. 55, pl. 127, figs. 8, 9.

Differs from *inepta* in the hind wing having the discocellulars dark and no postmedial line.

Hab. Dharmsála. *Exp.* 34–38 millim.

1747. **Euplexia indica**, *Moore, P. Z. S.* 1881, p. 344; *C. & S.* no. 2048.

Differs from *inepta* in the fore wing having the outer half not paler; the postmedial line not lunulate; the submarginal line straighter. Hind wing with the basal area not suffused; the marginal band not broader at apex.

Hab. Mussooree. *Exp.* 45 millim.

1748. **Euplexia confecta**, *Wlk. Cat.* xv, p. 1705; *C. & S.* no. 2028.
Agrotis hyblæa, *Feld. Reis. Nov.* pl. 108, fig. 43; *C. & S.* no. 1989.
Eliochrœa curtipalpis, *Butl. Ill. Het.* vii, p. 74, pl. 131, figs. 7, 8.

Head and thorax dark olive-brown; abdomen black-brown, the segments ringed with yellow. Fore wing olive-brown; the subbasal, ante- and postmedial double waved lines, and single submarginal line indistinct; the orbicular almost obsolete; the reniform with the lower part outlined with black and often filled in with white; some black marks on the submarginal line between the costa and vein 3. Hind wing orange-yellow, a large blackish patch on basal area and below median nervure; a broad, very irregular, black marginal band expanding at apex; cilia yellow except at middle.

Hab. N.W. Himalayas. *Exp.* 42–52 millim.

b. *Palpi with the 3rd joint long and reaching far above vertex of head.*

1749. **Euplexia pulcherrima**, *Moore, P. Z. S.* 1867, p. 54, pl. 6, fig. 3; *C. & S.* no. 2030.
Epilecta opulenta, *Butl. P. Z. S.* 1883, p. 160; *C. & S.* no. 2029.

Differs from *confecta* in having yellowish-green or green suffusion on the thorax and on the transverse lines of fore wing and reniform; the median inner area often suffused with black; one specimen has the orbicular, reniform, and postmedial area grey, with no green suffusion.

Hab. N.W. Himalayas; Sikhim; Nilgiris. *Exp.* 52 millim.

SECT. III. Antennæ fasciculated in male.

A. *Fore wing with the apex not produced.*

1750. **Euplexia atrovirens**, *Moore, P. Z. S.* 1867, p. 58; *C. & S.* no. 1933.

Head and thorax green and brown; palpi dark at sides; abdo-

men fuscous brown. Fore wing green suffused with brown, especially on medial area and near base of inner margin; the subbasal, ante- and postmedial double waved lines fairly prominent; the orbicular and reniform green and subquadrate; claviform black; a waved black line from reniform to inner margin; the submarginal line pale, with a chestnut band before it and some dark marks on it below apex; a lunulate marginal black line; cilia black at emarginations. Hind wing brownish fuscous, with indistinct postmedial and submarginal pale bands.

Hab. Sikhim; Khásis. *Exp.* 40 millim.

1751. **Euplexia pardaria**, *Moore, Lep. Atk.* p. 114, pl. 4, fig. 12; *C. & S.* no. 2096.
Luperina olivascens, *Moore, Lep. Atk.* p. 114; *C. & S.* no. 2095.

♀. Differs from *atrovirens* in being more ochreous (probably from fading), the orbicular and reniform more rounded; the postmedial line more irregularly lunulate; no rufous before the submarginal line, which is broader and more lunulate. Hind wing dark brown without markings. Underside pinkish; both wings with a large dark lunule at end of cell; hind wing with a postmedial line.

Hab. Sikhim. *Exp.* 38 millim.

1752. **Euplexia venosa**, *Moore, Lep. Atk.* p. 124; *C. & S.* no. 1955.

♂. Head and thorax olive-green, with a few rufous and black scales; abdomen fuscous. Fore wing olive-green suffused with rufous; the subbasal, ante- and postmedial waved lines with patches of deep black on their edges; the orbicular and reniform quadrate and joined to a band below the cell, so as to form an indistinct Y-shaped mark with a black V in its arms; a black submarginal mark below the apex; some pale costal specks towards apex; the veins greyish. Hind wing dark fuscous, the cilia whitish; underside suffused with grey; a black streak from the base in the cell; a cell-spot and postmedial line.

Hab. Sikhim. *Exp.* 30 millim.

*1753. **Euplexia? confluens**, *Moore, P. Z. S.* 1881, p. 354, pl. 38, fig. 20; *C. & S.* no. 1951.

♂. Dark purplish brown. Fore wing with ochreous black-edged sinuous subbasal and antemedial lines; the orbicular and reniform ochreous with brown centres and nearly conjoined on median nervure; claviform black; bases of veins 2 and 3 pale; a waved postmedial ochreous black-edged line; a pale brown-edged submarginal line. Hind wing fuscous, palest at base; an indistinct postmedial line; cilia ochreous.

Hab. Sikhim. *Exp.* 36 millim.

1754. **Euplexia mucronata,** *Moore, P. Z. S.* 1881, p. 345, pl. 38, fig. 8; *C. & S.* no. 2056.

♂. Pale ochreous brown; thorax and fore wing slightly tinged with reddish. Fore wing with the subbasal and antemedial waved black lines fairly prominent, the latter excurved; the orbicular and reniform pale and prominent; claviform a slight black lunule; the postmedial double line minutely waved, oblique, and approaching the antemedial line at inner margin; the outer margin irregularly dark, with a series of black lunules on it. Hind wing dark fuscous; underside pale, with cell-spot and waved postmedial line.

Hab. Sikhim. *Exp.* 32 millim.

1755. **Euplexia heterocampoides,** n. sp.

Head and thorax white and black; palpi and underside black; abdomen pale or dark fuscous. Fore wing white suffused with olive-green; the transverse lines white with black edges; some black suffusion beyond the subbasal line; the antemedial line angled and curved and with the inner black edge obsolete; the postmedial line prominent and approaching the antemedial line at inner margin, the area between them being suffused with black and brown; the orbicular and reniform ill-defined, with dark centres and broad olive borders; the submarginal line obsolescent, white, with three prominent dark dentitions below middle; cilia black, with white points. Hind wing pale fuscous, with an indistinct white lunulate submarginal band. Underside with a broad marginal whitish band to fore wing.

Hab. Kulu; Sikhim. *Exp.* 42 millim. Type in B. M.

B. (Chutapha). *Fore wing slightly more produced at apex.*

1756. **Euplexia costalis,** *Moore, Lep. Atk.* p. 131; *C. & S.* no. 1973.

♂. Head, thorax, and fore wing reddish ochreous, which has probably been olive-green in the fresh state; abdomen pale fuscous, with the dorsal tufts reddish. Fore wing with a pale fascia below the costa; a double subbasal waved black line; an antemedial straight erect line; orbicular and reniform pale and conjoined to a pale patch below median nervure, with black lower edge; the postmedial double line indistinct and nearly straight; a submarginal irregularly waved pale line with diffused dark inner edge. Hind wing pale fuscous; a marginal whitish band with dentate inner edge.

Hab. Sikhim. *Exp.* 42 millim.

SECT. IV. Antennæ bipectinated in male, with very short branches.

1757. **Euplexia icamba,** *Swinh. A. M. N. H.* (6) xii, p. 260.

♂. Head and thorax black-brown with a reddish tinge; abdomen dark fuscous, reddish towards extremity. Fore wing golden green suffused with black, except before antemedial line and on marginal area; a subbasal waved black line; an oblique antemedial dentate line with a strong tooth near inner margin, where it almost joins the lunulate postmedial line; orbicular and reniform dark and ill-defined; the submarginal line prominent and lunulate; cilia black at emarginations. Hind wing pale fuscous, with indistinct diffused dark postmedial and submarginal lines; cilia black with white points.

Hab. Sikhim; Khásis. *Exp.* 46 millim. Type in B. M.

1758. **Euplexia cyanelinea,** n. sp.

♂. Differs from *icamba* in the head, thorax, and abdomen being pale red-brown. Fore wing with the green area less suffused; the ante- and postmedial lines metallic blue-grey. Hind wing dark fuscous; cilia of both wings tipped with white.

Hab. Sikhim, 10,000 feet (*Elwes*). *Exp.* 45 millim. Type in coll. Elwes.

SECT. V. (*Chandata*). Antennæ bipectinated in male, the branches long.

1759. **Euplexia pectinata,** *Warr. P. Z. S.* 1888, p. 308; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 4.
Euplexia fasciata, *Hmpsn. Ill. Het.* viii, p. 77, pl. 145, fig. 20.

Differs from *albovittata* (p. 217) in the palpi and metathoracic tuft being but slightly white; the abdomen dark at base; fore wing with a black spot detached from the basal area; the medial dark band hardly angled at outer edge; the postmedial band replaced by a rufous spot beyond the cell; the dentitions on the lower part of the marginal band prominent. Hind wing and underside black, the former with the marks on vein 2, the latter with a white cell-spot to each wing.

In the form *fasciata* from the Nilgiris there is a prominent dark postmedial band from the costa to vein 5 instead of the rufous spot.

Hab. Dharmsála; Nilgiris. *Exp.*, ♂ 40, ♀ 42 millim.

1760. **Euplexia partita,** *Moore, Lep. Atk.* p. 114, pl. 4, fig. 16; *C. & S.* no. 2093.

♂. Head white, black below; collar white, fringed with black; thorax black, the patagia with white patches; abdomen fuscous black. Fore wing bluish white; two interrupted waved black

subbasal lines; an interrupted antemedial line, expanding into a spot below the median nervure; a triangular black medial patch on the costa, centred with blue-grey, and extending downwards between the faint orbicular and reniform stigmata; the postmedial line interrupted and excurved round a black spot beyond the reniform; the submarginal line almost obsolete, except towards costa and inner margin, with some fuscous patches between it and the postmedial line and a black spot beyond it near outer angle; a marginal black line; cilia intersected with black. Hind wing dark fuscous; the cilia white in places.

Hab. Sikhim, 10,000 feet. *Exp.* 24 millim.

1761. **Euplexia lageniformis,** n. sp.

♂. Differs from *lagenifera* (p. 216) in having the collar and patagia brown and the antennæ with long branches.

Hab. Sikhim (*Atkinson*). *Exp.* 36 millim. Type in coll. Elwes.

1762. **Euplexia heterocampa,** *Moore, Lep. Atk.* p. 115, pl. 4, fig. 15; *C. & S.* no. 2097.

Exactly similar to *heterocampoides* (p. 221), but with long branches to the antennæ.

Hab. Sikhim. *Exp.* 42 millim.

Genus **ANCARA.**

Ancara, *Wlk. Cat.* xv, p. 1714 (1858).
Data, *Wlk. Journ. Linn. Soc.* vi, p. 191 (1862).
Sydiva, *Moore, Lep. Atk.* p. 95 (1882).

Type, *A. replicans*, Wlk., from Borneo.

Range. Himalayas; S. India; Ceylon; Khásis; Andamans; Borneo.

Differs from *Euplexia* in the second joint of palpi reaching vertex of head; the third joint long.

SECT. I. (*Ancara*). Antennæ bipectinated in both sexes; the branches long in male; palpi with the 3rd joint obliquely porrect; eyes without lashes.

1763. **Ancara obliterans,** *Wlk. Cat.* xv, p. 1715; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 19.
Ancara punctiplaga, *Wlk. Journ. Linn. Soc.* vi, p. 191.

Red-brown; abdomen fuscous, with the dorsal tufts red-brown. Fore wing with the subbasal, antemedial, postmedial, and submarginal lines very indistinct, the last with some dark streaks and patches on it near middle; the stigmata indistinct; a lunulate marginal line. Hind wing reddish fuscous.

In the form *punctiplaga* there is a large ochreous patch beyond the cell of the fore wing.

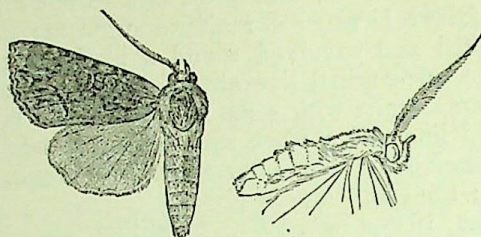



Fig. 127.—*Ancara obliterans*, ♂. 1/1.

Hab. Nilgiris; Ceylon; Borneo. *Exp.* 53 millim.

*1764. **Ancara ? leucostigma,** *Moore, P. Z. S.* 1867, p. 51; *C. & S.* no. 2055.

Head, collar, and patagia chestnut; thorax and abdomen ochreous grey. Fore wing chestnut; the inner margin pale; sub-basal, ante- and postmedial double waved lines, the last incurved to lower angle of cell; orbicular with dark outline; reniform white and quadrate; a black line between the stigmata, and another outlining the claviform, which is represented by a dark patch; a submarginal dentate dark line; some dark suffusion on costa before middle and on outer margin. Hind wing fuscous, pale at base.

Hab. "Bengal." *Exp.* 54 millim.

Sect. II. (*Sydiva*). Antennæ minutely serrated in male, simple in female; palpi with the 3rd joint porrect; eyes lashed.

1765. **Ancara nigrogrisea,** *Moore, Lep. Atk.* p. 96; *C. & S.* no. 1649.

Head and thorax black, grizzled with white; abdomen fuscous, with the dorsal tufts black; legs ringed with white. Fore wing black, thickly irrorated with white scales, and crossed by about seven dentate black lines; the stigmata indistinct; a white speck on reniform at lower angle of cell; a submarginal series of black dashes, with white specks on them; cilia streaked with white. Hind wing fuscous, with traces of a postmedial line; cilia with a series of white specks, and tipped with white.

Hab. Sikhim. *Exp.* 56 millim.

Sect. III. Antennæ ciliated in male; palpi with the 3rd joint upturned; eyes without lashes.

1766. **Ancara harfordi,** n. sp.

Head and thorax very dark red-brown; abdomen fuscous, the

dorsal tufts darker. Fore wing dark red-brown with a purplish gloss; the double waved subbasal, ante- and postmedial lines indistinct; the stigmata with slight black outlines; a white lunule on reniform; some rufous streaks before the submarginal line, which consists of a series of small lunulate marks; a marginal series of small black lunules. Hind wing pale fuscous, with traces of a medial line.

Hab. Simla (*Harford*). *Exp.* 52 millim. Type in B. M.

1767. **Ancara rubra**, n. sp.

♂. Head and thorax deep vinous red; abdomen fuscous, with ochreous anal tuft. Fore wing vinous red, with indistinct double subbasal, ante- and postmedial double waved lines; the orbicular and reniform indistinct, the latter with a white lunule on its outer edge; the claviform a black lunule; an irregularly sinuous submarginal line, with three dark dashes on it at centre; three white specks on costa towards apex. Hind wing fuscous, the cilia ochreous; underside with cell-spot and postmedial line.

Hab. Sikhim (*Möller*). *Exp.* 44 millim. Type in coll. Elwes.

1768. **Ancara thalpophiloides**, *Wlk. Journ. Linn. Soc.* vi, p. 192.
Thalpophila cuprea, *Moore, P. Z. S.* 1877, p. 604, pl. 59, fig. 10; *C. & S.* no. 2046.
Thalpophila delineata, *Moore, Lep. Ceyl.* iii, p. 25, pl. 146, fig. 5; *C. & S.* no. 2047.

Head and thorax red-brown; abdomen yellow, the extremity red-brown. Fore wing red-brown, the veins pale; a waved subbasal line; the ante- and postmedial waved lines forming, with the orbicular and reniform, a broad Y-shaped band, of which the outer arm is broad, with one or two white specks on it representing the reniform; a submarginal dentate line, with some white on it towards costa; a marginal series of lunules. Hind wing lemon-yellow, with broad marginal red-brown band slightly angled at middle, and broader in the female than the male. Underside pale, suffused and irrorated with red-brown; both wings with a lunulate postmedial line, highly lunulate and curved on hind wing, which has a spot at end of cell.

The Ceylon form *delineata* has the ground-colour rather darker.

Hab. Ceylon; Andamans; Borneo. *Exp.* 38 millim.

1769. **Ancara calopistrioides**, *Moore, P. Z. S.* 1881, p. 344; *C. & S.* no. 2045.

♀. Differs from *thalpophiloides* in the ground-colour of the fore wing being darker, the lines and veins white; the apical half of submarginal line very highly dentate.

Hab. Khásis. *Exp.* 40 millim.

1770. **Ancara glaucochlora**, n. sp.

♂. Head and collar pale reddish; thorax pale green; abdomen pale red, with large dorsal green tufts. Fore wing whitish, irrorated with fuscous; the basal and medial areas pale silvery green; two indistinct subbasal lines, the outer excurved and nearly joining the curved antemedial line at inner margin; a diffused medial oblique line; very irregular dentate postmedial and submarginal lines. Hind wing pale fuscous, yellowish at base; an indistinct cell-spot and whitish medial line. Underside dirty ochreous, with three fuscous bands on each wing, the outer one broad.

Hab. Sikhim (*Knyvett*). *Exp.* 48 millim. Type in coll. Knyvett.

Genus MAGUSA.

Magusa, *Wlk. Cat.* xi, p. 762 (1857).
Sasunaga, *Moore, P. Z. S.* 1881, p. 342.

Type, *M. strigifera*, Wlk., from the Amazons.

Range. S. America; India and Ceylon.

Differs from *Euplexia* in the third joint of palpi reaching above vertex of head; the dorsal tufts of abdomen slight; fore wing very long and narrow, the apex rounded, the outer margin oblique.

1771. **Magusa tenebrosa**, *Moore, P. Z. S.* 1867, p. 59; *C. & S.* no. 2044.

Dark and red-brown or black and grey. Fore wing with slight streaks in the interspaces; the transverse lines almost obsolete; the orbicular small, circular, and usually prominent; reniform almost obsolete; a dark patch on costa before apex; the apical

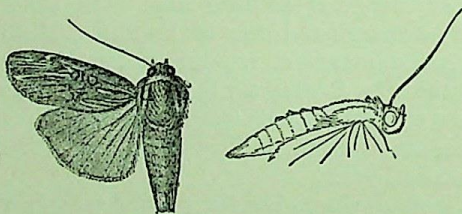



Fig. 128.—*Magusa tenebrosa*, ♂. ½.

and basal inner areas and the outer angle often grey or red-brown. Hind wing fuscous brown.

Hab. Simla; Sikhim; Poona; Nilgiris; Ceylon. *Exp.* 36–42 millim.

Genus EUROIS.

Eurois, *Hübn. Verz.* p. 217 (1818).
Chiripha, *Wlk. Cat.* ix, p. 200 (1856).
Checupa, *Moore, P. Z. S.* 1867, p. 60.

Type, *E. occulta*, Linn., from Europe.
Range. Nearctic and Palæarctic regions; throughout India and Ceylon; Assam Hills.

Eyes naked and without lashes; proboscis fully developed; palpi upturned, reaching vertex of head, and smoothly scaled; thorax with a small furrowed tuft behind collar and a pair of tufts on metathorax; abdomen without tufts, the dorsal part of proximal segments clothed with coarse hair; tibiæ without spines; fore wing with the cilia crenulate.

SECT. I. Antennæ of male fasciculate.

A. *Fore wing short and broad.*

1772. **Eurois retrahens,** *Wlk. Cat.* xi, p. 757; *Hmpsn. Ill. Het.* ix, pl. 162, fig. 6; *C. & S.* no. 2145.

♀. Head and thorax dark red-brown; abdomen fuscous. Fore wing dark red-brown; subbasal and antemedial oblique, slightly waved double lines filled in with white; the orbicular and reniform with whitish outline and dark centre; a postmedial double line filled in with white, acutely angled beyond the cell, and slightly waved from the angle to inner margin, where it nearly meets the antemedial line; a pale streak on inner margin; an irregularly waved obsolescent submarginal pale line; a marginal lunulate black line. Hind wing dark fuscous, the bases of cilia ochreous; underside with a cell-spot and postmedial line.
Hab. Sikhim; Ceylon. *Exp.* 40 millim.

1773. **Eurois luteifrons,** *Wlk. Cat.* xi, p. 751; *C. & S.* no. 1953.

Differs from *retrahens* in the head being ochreous; the abdomen tinged with ochreous. Fore wing with the postmedial line curved instead of angled beyond the cell, and with ochreous and chestnut beyond it; the submarginal line reduced to a series of pale specks on dark lunules. Hind wing with the basal area tinged with ochreous; traces of a postmedial line.
Hab. Kashmir; Khásis. *Exp.* 88 millim.

1774. **Eurois decorata,** *Moore, Lep. Atk.* p. 111, pl. 4, fig. 8; *C. & S.* no. 2073.

Head and thorax dark red-brown, irrorated with grey; abdomen reddish ochreous. Fore wing dark red-brown, irrorated with grey; the subbasal and antemedial double waved dark lines oblique; the orbicular and reniform conjoined on median nervure, and with

slight ochreous outlines, the latter with a red lunule on it, the area surrounding them in and beyond the cell darker; the submarginal line dentate; a series of marginal lunules. Hind wing ochreous fuscous; underside with an indistinct cell-spot and postmedial line.

Hab. Sikhim. *Exp.* 42 millim.

1775. **Eurois separata,** *Moore, Lep. Atk.* p. 107; *C. & S.* no. 2146.

♂. Differs from *luteifrons* in the fore wing being fuscous; the antemedial line with three angles in it and more erect; the orbicular and reniform larger and better defined; a submarginal irregularly sinuous line without rufous on its inner edge. Hind wing with a greyish marginal band; underside with indistinct postmedial and submarginal lines to each wing.

Hab. Sikhim. *Exp.* 40 millim.

1776. **Eurois simulata,** *Moore, P. Z. S.* 1881, p. 343, pl. 38, fig. 1; *C. & S.* no. 2148.

Differs from *separata* in the markings of the fore wing being reddish instead of whitish. Hind wing with a dark line through the cilia. Underside with the pale marginal band to both wings more prominent.

Hab. Sikhim. *Exp.* 46 millim.

1777. **Eurois albicostata,** n. sp.

Head and collar whitish; thorax and abdomen fuscous. Fore wing reddish brown, suffused with purplish fuscous, with a broad costal whitish fascia, on which are some black specks towards apex; the orbicular oblique, whitish, joined to the fuscous reniform and continued as an oblique streak to vein 1; a V-shaped black mark between the orbicular and reniform; beyond the reniform is a pale reddish shade merging into the whitish costal fascia; faint traces of the usual double waved lines; a marginal series of black and white specks. Hind wing pale fuscous; underside with cell-spot and crenulate postmedial line.

One female has the whole thorax whitish; the costal fascia purplish grey, without black specks towards apex; the reniform indistinct.

Hab. Simla (*Harford*). *Exp.* 28 millim. Type in B. M.

1778. **Eurois lubrica,** *Butl. Ill. Het.* vii. p. 60, pl. 128, fig. 9.

Head and thorax black, irrorated with grey scales; abdomen pale fuscous. Fore wing fuscous black, irrorated with grey scales; a pale basal patch on costal area; the subbasal and antemedial double-waved black lines indistinct; the orbicular and reniform very large and grey, with a large quadrate whitish patch below them, having a black streak on its lower edge; the postmedial line indistinct, slightly lunulate and curved; the submarginal

irregularly-waved line whitish; cilia with the bases white, the tips dark.

Hab. Dharmsála. *Exp.* 46 millim.

1779. **Eurois griseimarginata**, n. sp.

♀. Fuscous black. Fore wing with the double subbasal, ante- and postmedial and single waved submarginal line indistinct; the orbicular and reniform indistinct; a marginal series of pale specks. Underside with a postmedial line; a grey marginal band to both wings, broad on fore wing.

Hab. Dalhousie (*Harford*). *Exp.* 46 millim. Type in B. M.

1780. **Eurois leucosticta**, *Moore, Lep. Atk.* p. 129, pl. 4, fig. 22; *C. & S.* no. 1976.

♂. Head and thorax dark olive, variegated with white; abdomen fuscous, the terminal half tinged with pink. Fore wing olive, much variegated with white, especially between the waved black sub-basal and antemedial oblique lines and between the obliquely lunulate postmedial and ill-defined irregular submarginal line; the orbicular and reniform white, with olive centres; a large white patch on median nervure below the orbicular; a marginal series of black specks. Hind wing fuscous; the underside tinged with pink, and with conspicuous cell-spot and postmedial line.

Hab. Sikhim, 10,000 feet. *Exp.* 32 millim.

1781. **Eurois flavipicta**, n. sp.

♂. Head and thorax clothed with brown, red-brown, and yellow hair; abdomen fuscous. Fore wing grey-brown, suffused in parts with pale chestnut; some yellow patches on the basal area; a black streak from the base above vein 1; the ante- and postmedial lines yellow, rather close together below the cell, and the area between them blackish, with the large orange-centred yellow orbicular on it; the reniform barely traceable; the submarginal sinuous line yellow. Hind wing dark fuscous; underside with cell-spot and postmedial line.

Hab. Sikhim, 10,000 feet (*Möller*). *Exp.* 32 millim. Type in coll. Elwes.

B. (Checupa). *Fore wing long and narrow.*

1782. **Eurois fortissima**, *Moore, P. Z. S.* 1867, p. 60, pl. 6, fig. 5; *C. & S.* no. 1972.

♂. Head and thorax golden green and brown. Fore wing golden green; a brown patch at base, bounded by the double-waved subbasal line; a broad brown antemedial band crossed by the double lines, filled in with green; the orbicular and reniform green with diffused dark centres, and a brown patch between them; a brown patch beyond the cell, bounded by the double

lunulate postmedial lines, which are much incurved below end of cell; a series of submarginal white points with dark lunules before them and marginal specks beyond them. Abdomen and hind wing dark brown; underside with cell-spot and irregularly waved line; both wings with a series of marginal spots.

Hab. Sikhim. *Exp.* 58 millim.

SECT. II. Antennæ of male bipectinate, the branches short.

1783. **Eurois chalybeata**, *Wlk. Cat.* xxxii, p. 665; *C. & S.* no. 2071.
Mamestra suffusa, *Moore, P. Z. S.* 1867, p. 52; *C. & S.* no. 2081.

♂. Head and thorax dark red-brown with a ferruginous tinge; abdomen darker. Fore wing ferruginous red; the subbasal and antemedial double waved lines indistinct; the orbicular, reniform, and claviform with dark outline, the reniform with a fulvous or rarely white spot on its outer edge; the curved postmedial double

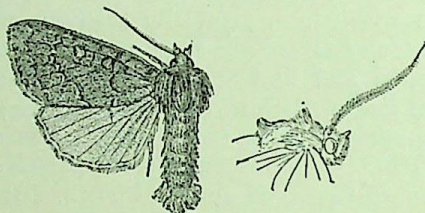



Fig. 129.—*Eurois chalybeata*, ♂. $\frac{1}{1}$.

line lunulate; the submarginal irregularly waved line with pale outer edge; a lunulate marginal dark line; three pale specks on costa towards apex. Hind wing fuscous brown; cilia with an ochreous line through them; underside with cell-spot and postmedial line.

♀. Duller and less ferruginous; fore wing with the apex more produced and outer margin more oblique; one specimen with the margin ochreous.

Hab. Kulu; Sikhim; Khásis. *Exp.*, ♂ 48, ♀ 58 millim.

SECT. III. Antennæ of male minutely ciliated.

1784. **Eurois involuta**, *Wlk. Cat.* ix, p. 201; *C. & S.* no. 2141.

♀. Head, thorax, and abdomen whitish with a fuscous tinge; palpi blackish at sides. Fore wing black, with the costal area and veins whitish; three subbasal white streaks (one oblique below costa, one angled below the cell, the third curved above inner margin); two postmedial streaks (one curved beyond lower angle of cell, the other angled below vein 2); a highly dentate interrupted submarginal white line; a white marginal band. Hind wing fuscous, whitish on basal and inner areas, with a cell-spot and postmedial line.

Hab. N.W. Himalayas. *Exp.* 52 millim.

1785. **Eurois virens,** *Butl. A. M. N. H.* (5) i, 1878, p. 194; *id. Ill. Het.* iii, pl. 45, fig. 5; *C. & S.* no. 1930 A.
Eurois magnifica, *Moore, Lep. Atk.* p. 127; *C. & S.* no. 1928.

Head and thorax yellow-green; the second joint of palpi and tufts on thorax red-brown; abdomen slaty blue. Fore wing dark brown; the costal area suffused with green; the subbasal and antemedial double waved lines filled in with green; the orbicular and reniform with reddish outlines and dark centres, the latter with a pale lunule in centre; the postmedial double lunulate line filled in with grey; three white specks on costa towards apex; a submarginal series of black and green lunules, the black part being elongate in one lunule below the costa and two above middle; a marginal series of small black and rufous lunules; cilia red-brown. Hind wing slaty blue, fuscous towards outer margin; the cilia pure white.

The Sikhim form *magnifica* has the inner area of fore wing reddish, the hind wing brown.

Hab. Japan; Dharmsála; Thandiáni; Sikhim. *Exp.* 70 millim.

Genus POLIA.

Polia, *Ochs. Eur. Schmett.* iv, p. 73 (1816).
Crymodes, *Guen. Ann. Soc. Ent. Fr.* 1841, p. 238.
Nikara, *Moore, Lep. Atk.* p. 126 (1882).
Dimya, *Moore, Lep. Atk.* p. 121.
*Hyada, *Moore, Lep. Atk.* p. 129.

Type, *P. flavicincta*, Schiff., from Europe.

Range. Nearctic and Palæarctic regions; Himalayas; Khásis.

Differs from *Eurois* in the eyes having lashes, the palpi, head, and thorax being much more hairy, the last without tufts; cilia of fore wing but slightly crenulate.

SECT. I. (*Polia*). Antennæ ciliated.

A. *Fore wing broad.*

1786. **Polia herchatra,** *Swinh. A. M. N. H.* (6) xii, p. 260.

Head and thorax clothed with golden brown, black, and grey hair; abdomen pale, with orange anal tuft. Fore wing clothed with black, golden, and grey scales; a large yellow patch at base below median nervure; the subbasal and antemedial waved lines outlined with grey; the orbicular grey; the reniform with yellow marks on its inner and outer margins; the postmedial lunulate line outlined with grey, curved, and nearly meeting the antemedial line at inner margin; a series of irregularly placed sub-

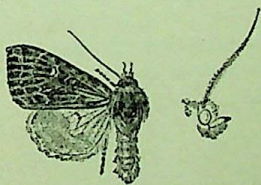



Fig. 130.
Polia herchatra, ♂. ½.

marginal orange dashes; cilia chequered brown and orange. Hind wing pale fuscous, with traces of a lunule at end of cell; a postmedial line and submarginal band; cilia orange-yellow; underside with cell-spot and irregular postmedial line.

Hab. Sikhim; Khásis. *Exp.* 36 millim. Type in B. M.

1787. **Polia sikkimensis,** *Moore, P. Z. S.* 1881, p. 348, pl. 38, fig. 16; *C. & S.* no. 2101.

Differs from *herchatra* in being of a duller colour. Fore wing with the ante- and postmedial lines obscure; the orbicular and reniform whitish, the latter large and prominent; the yellow dashes of the submarginal line smaller; cilia of both wings grey.

In another form the whole of the markings of the fore wing are obscured and only just indicated, so that it is nearly uniformly dark irrorated with yellow scales.

Hab. Sikhim, 10,000 feet. *Exp.* 28–32 millim.

1788. **Polia canosparsa,** n. sp.

♂. Differs from *herchatra* in being much darker, the head but slightly tinged with yellow; thorax and abdomen without yellow. Fore wing slightly irrorated with pale yellow and grey, the markings less prominent; the submarginal line slightly outlined with grey and with no yellow spots; cilia black and grey. Hind wing darker towards outer margin, the cilia tipped with grey.

Hab. Sikhim, 12,000 feet (*Elwes*). *Exp.* 38 millim. Type in coll. Elwes.

1789. **Polia transversa,** *Moore, Lep. Atk.* p. 125; *C. & S.* no. 1970.
Hecatera modesta, *Moore, Lep. Atk.* p. 125; *C. & S.* no. 1969.

♀. Head and thorax clothed with grey and black scales; abdomen fuscous. Fore wing clothed with black, white, and ochreous scales; indistinct double waved subbasal, antemedial, and postmedial waved lines; the orbicular and reniform with white edges and fairly prominent, the latter conjoined at its lower side to the incurved postmedial line; a prominent white dentate submarginal line. Hind wing fuscous; underside with cell-spot and postmedial line.

The form *transversa* has the basal and outer areas of fore wing whitish, the medial band darker, whilst *modesta* is more uniform.

Hab. Kashmir; Thandiáni, Punjab. *Exp.* 38 millim.

1790. **Polia endroma,** *Swinh. A. M. N. H.* (6) xii, p. 259.

♀. Head, thorax, and fore wing bright chestnut; the last with an obliquely excurved blue-grey antemedial line, the area before it irrorated with blue-grey scales; the orbicular and reniform

indistinct, the former oblique; a postmedial blue-grey line angled at vein 5, the area beyond it irrorated with blue-grey scales, and with traces of a submarginal dentate line. Abdomen reddish. Hind wing fuscous; cilia rufous.

In other specimens the collar is yellowish chestnut; fore wing with the stigmata and outer area bright ochreous, with hardly any blue suffusion.

Hab. Sikhim; Khásis. *Exp.* 40 millim. Type in B.M.

1791. **Polia dentata,** n. sp.

Differs from *endroma* in the basal and outer areas of fore wing being suffused with grey instead of blue; the antemedial line recurved towards inner margin, the reniform smaller and lunulate; the postmedial line more rounded and slightly dentate between veins 3 and 6; the submarginal line irregularly sinuous.

Hab. Sikhim, 10,000 feet (*Elwes*). *Exp.* 38 millim. Type in coll. Elwes.

1792. **Polia castanea,** *Moore, Lep. Atk.* p. 126, pl. 4, fig. 24; *C. & S.* no. 1974.

♂. Head and thorax dark red-brown, powdered with white scales. Fore wing chestnut; the area just above vein 2 and the median nervure as far as the postmedial line suffused with deep red-brown and powdered with bluish-white scales; the orbicular oblique and slightly defined by bluish-white scales; the postmedial line dark, angled below the costa, sending dark streaks along the veins to the cell and obsolescent towards inner margin; the outer margin irrorated with bluish-white scales. Hind wing dark fuscous; underside with cell-spot and a postmedial line.

Hab. Sikhim. *Exp.* 40 millim.

1793. **Polia microsticta,** n. sp.

♂. Head, thorax, and abdomen ochreous brown. Fore wing ochreous; the costal area suffused with pinkish brown to near the apex; the subbasal and antemedial waved and postmedial lunulate lines indistinct; the orbicular and reniform small, with slight black outline and some dark suffusion between them; the marginal line oblique and arising from the outer margin below the apex; the area beyond it irrorated with brown and white; a marginal series of black specks. Hind wing dark fuscous; cilia of both wings pinkish brown. Underside of hind wing with cell-spot and postmedial line.

Hab. Sikhim (*Möller*). *Exp.* 36 millim. Type in coll. Elwes.

1794. **Polia griseirufa,** n. sp.

♂. Head and thorax bright rufous, abdomen paler. Fore wing bright rufous; the subbasal, ante- and postmedial waved lines

ochreous, the latter excurved beyond the cell; some grey suffusion on basal and medial areas below the cell; reniform a pure white speck; the area beyond the submarginal irregularly sinuous line silvery grey; a marginal series of black specks; cilia rufous. Hind wing fuscous, with the cilia rufous. Underside of both wings with cell-spot and postmedial line.

Hab. Sikhim, 10,000 feet (*Elwes*). *Exp.* 25 millim. Type in coll. Elwes.

*1795. **Polia ? khasiana**, *Moore, P. Z. S.* 1881, p. 342, pl. 37, fig. 5; *C. & S.* no. 2131.

Head, thorax, and fore wing dull red-brown, the last irrorated with purplish grey; brighter brown pale-edged sinuous antemedial, postmedial, and submarginal lines; orbicular and reniform large; the median and submedian nervures dark; the outer area brighter brown. Hind wing greyish white, with the veins and margin fuscous.

Hab. Khásis. *Exp.* 40 millim.

B. *Fore wing rather narrower.*

1796. **Polia junctura**, n. sp.

♂. Ochreous brown. Fore wing suffused with pale reddish brown, some white scales on the veins; the antemedial line pale, oblique and recurved near inner margin; the area in and beyond the cell black; the orbicular and reniform pale and conjoined into a U-shaped mark; the postmedial line situated nearer the margin than usual, angled at vein 5 and with some ill-defined dark marks beyond it. Hind wing with indistinct cell-spot and postmedial line.

Hab. Sikhim, 7000 feet (*Möller*). *Exp.* 32 millim. Type in coll. Elwes.

SECT. II. (*Dimya*). Antennæ fasciculated in male.

1797. **Polia sinuata**, *Moore, Lep. Atk.* p. 122, pl. 4, fig. 17; *C. & S.* no. 1923.

Differs from *dentata* in being dull red-brown suffused with fuscous; fore wing with the antemedial line in the form of three arcs; the postmedial line dentate throughout and less oblique towards inner margin; the orbicular and reniform indistinct.

The type, from which the figure was taken, is very worn.

Hab. Sikhim, 10,000 feet. *Exp.* 38 millim.

1798. **Polia virescens**, n. sp.

♂. Head, thorax, and fore wing clothed with grey, fuscous, and dull green scales; abdomen and hind wing greyish fuscous.

Fore wing with faint traces of antemedial, postmedial, and submarginal lines and orbicular and reniform marks.

Hab. Kashmir (*Thompson*). *Exp.* 46 millim. Type in coll. Leech.

SECT. III. (*Hyada*). Antennæ of male bipectinate.

*1799. **Polia ? grisea**, *Moore, Lep. Atk.* p. 130, pl. 4, fig. 26; *C. & S.* no. 1978.

♂. Ochreous grey. Fore wing irrorated with brown; a straight subbasal brown line; sinuous antemedial, two medial, and one postmedial line, the last forked towards costa; orbicular and reniform whitish, the latter indistinct; a series of broad dentate marginal marks. Hind wing ochreous brown.

Hab. Sikhim, 15,000 feet. *Exp.* 36 millim.

Genus **DIPTERYGIA**.

Dipterygia, *Steph. Brit. Ent., Haust.* ii, p. 167 (1829).

Type, *D. scabriuscula*, Linn., from Europe.

Range. Nearctic and Palæarctic regions; Himalayas; Nágas; Nilgiris; Ceylon.

Eyes naked and without lashes; proboscis fully formed; palpi upturned, reaching above vertex of head, the second joint with long hair below; antennæ minutely ciliated in male. Thorax with a long furrowed crest behind the collar; abdomen with dorsal tufts on proximal segments; tibiæ without spines.

1800. **Dipterygia nocturna**, *Hmpsn. Ill. Het.* viii, p. 78, pl. 145, fig. 19.
Dipterygia indica, *Moore, P. Z. S.* 1867, p. 51 (præocc.); *C. & S.* no. 2041.

Head ochreous white, variegated with brown and black scales; thorax black-brown, the crest brown; abdomen dark fuscous. Fore wing black-brown, the stigmata barely traceable; faint traces of a postmedial curved and waved line with two white subapical specks beyond it, and a large whitish fuscous-suffused patch on inner margin from it to outer angle, with a small patch on outer margin above the larger one; traces of a submarginal series of white specks. Hind wing dark fuscous; the cilia whitish.

Hab. Sikhim; Nilgiris. *Exp.* 38 millim.

1801. **Dipterygia cristifera**, *Hmpsn. Ill. Het.* ix, p. 94, pl. 162, fig. 7.

Differs from *nocturna* in being slightly paler. Fore wing with the stigmata more prominent and pale-ringed; a pale fascia with a black dash above it on inner margin; the patch at outer angle more suffused with brown and much shorter and broader, the postmedial

line being less curved and with black lines bounding it on inner and upper edges; the submarginal series of pale specks more prominent.

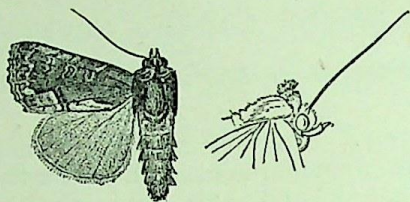



Fig. 131.—*Dipterygia cristifera*, ♂. 1/1.

Hab. Ceylon. *Exp.* 40 millim.

*1802. **Dipterygia ? sikkima**, *Moore, Lep. Atk.* p. 105; *C. & S.* no. 2042.

Differs from *nocturna* in the fore wing being slightly narrower; sinuous ochreous subbasal, ante- and postmedial lines; the pale patch at outer angle less prominent, streaked with dark brown and not extending along outer margin towards apex; the orbicular and reniform spots more distinct. Hind wing paler, brownish white at base, and with indistinct postmedial line.

This may be allied to *Euplexia subcurva*, Wlk.

Hab. Sikhim. *Exp.* 38 millim.

1803. **Dipterygia indica**, *Wlk. Cat.* xxxii, p. 647; *C. & S.* no. 2138.

Very pale brown; collar with two black lines; patagia outlined with black. Fore wing with a waved black fascia below median nervure; the subbasal and antemedial double black lines very highly dentate; the orbicular and reniform with black outlines, the former very oblique; the double waved postmedial line obliquely curved; a diffused fuscous oblique fascia from outer margin below apex to the postmedial line with some black dashes on it; a similar but not oblique fascia above outer angle. Hind wing whitish, with a broad marginal fuscous band. Underside of both wings with a postmedial series of specks.

Hab. N.W. Himalayas. *Exp.* 48 millim.

1804. **Dipterygia umbrifera**, *Butl. Ill. Het.* vii, p. 46, pl. 126, fig. 1.

Head, thorax, and abdomen pale, suffused with red-brown. Fore wing grey-brown; the basal area and inner area as far as the postmedial line suffused with dark red-brown; the subbasal and antemedial double waved lines indistinct; the orbicular and reniform large, pale-ringed, and indistinct; the postmedial line very

much excurved beyond cell, angled and bent inwards between veins 2 and 3, where it encloses a grey patch at outer angle; a dark streak from it to outer margin above vein 3. Hind wing fuscous: underside with cell-spot and waved postmedial line.

Hab. Dharmsála. *Exp.* 36 millim.

1805. **Dipterygia grata,** *Butl. Trans. Ent. Soc.* 1881, p. 172.

Head and thorax pale brown; palpi pinkish at sides, white in front; collar whitish; the tuft on thorax vinous. Fore wing pale brown; the costal and inner areas suffused with pink; the orbicular and reniform pinkish white with pale brown centres, the latter figure-of-8-shaped; an indistinct crenulate postmedial line; some red-brown streaks on inner margin and at apex; outer margin red-brown with a fine white line. Hind wing fuscous; underside with cell-spot and indistinct postmedial line.

Hab. Japan; Nágas. *Exp.* 38 millim.

Genus EUSCOTIA.

Euscotia, *Butl. Ill. Het.* vii, p. 47 (1889).

Type, *E. inextricata*, Moore.

Range. Japan; N.W. Himalayas; Nilgiris.

Differs from *Dipterygia* in the 3rd joint of the palpi being long and porrect; the abdominal tufts larger. Fore wing longer, the outer margin more oblique; the cilia of both wings highly crenulate.

1806. **Euscotia inextricata,** *Moore, P. Z. S.* 1881, p. 342; *C. & S.* no. 2139.

♂. Grey-brown; head, collar, and patagia with fine black lines. Fore wing with the subbasal, antemedial, and postmedial indistinct

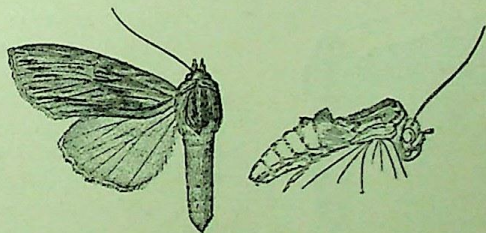



Fig. 132.—*Euscotia inextricata*, ♂. 1/1.

double lines extremely irregularly dentate; the orbicular and reniform indistinct, with a brown streak below them and some oblique costal strigæ above them; some ill-defined irregular submarginal brown streaks, the streak above outer angle long and extending to

the postmedial line. Hind wing white; the veins of outer area and margin suffused with brown.

♀ with the hind wing wholly suffused with brown.

Hab. N.W. Himalayas; Nilgiris. *Exp.* 57 millim.

Genus CUCULIA.

Cuculia, *Schrank, Fauna Boica*, ii, 2. p. 157 (1802).
Callænia, *Hübn. Verz.* p. 246 (1818).

Type, *C. verbasci*, Linn., from Europe.

Range. N. America; Europe; S. Africa; Japan; Himalayas; Nágas.

Eyes naked and with or without lashes; proboscis fully formed; palpi obliquely porrect, with rather long hair below; frons ridged; antennæ almost simple. Collar running up to a peak at centre; thorax almost without tufts; abdomen long and tapering to a point, the proximal segments of abdomen with dorsal tufts. Fore wing long and narrow, the costa arched towards apex which is acute; both wings with the outer margin slightly angled in the middle and the cilia more or less crenulate.

1807. **Cuculia albescens**, *Moore, P. Z. S.* 1881, p. 357; *C. & S.* no. 2336.

Callænia elongata, *Butl. A. M. N. H.* (5) vi, p. 67; *id. Ill. Het.* vi, pl. 103, fig. 7; *C. & S.* no. 1528.
Cucullia atkinsoni, *Moore, Lep. Atk.* p. 131; *C. & S.* no. 2337.

Head and thorax grey and brown; abdomen brown, with the dorsal tufts dark. Fore wing grey, suffused with brown especially on costal and inner areas; an indistinct irregular exceedingly dentate double antemedial line and traces of a similar postmedial

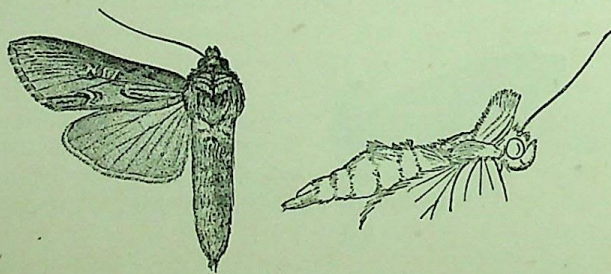



Fig. 133.—*Cuculia albescens*, ♂. 1/1.

line; the orbicular and reniform indistinct, with pale outlines; a dark streak on inner margin, and another above outer angle. Hind wing pale, the outer area suffused with brownish fuscous.

Hab. N.W. Himalayas; Sikhim. *Exp.* 50–58 millim.

1808. **Cuculia nigrifascia**, n. sp.

♂. Differs from *albescens* in the fore wing having the black streak from base below median nervure more prominent; the antemedial line more prominent and much less dentate; a prominent black band between the orbicular and reniform continued to near inner margin; short black streaks on outer area at middle and above outer angle. Hind wing paler.

Hab. Murree. *Exp.* 50 millim. Type in B. M.

1809. **Cuculia albipennis**, n. sp.

♂. Head and thorax white; collar with a black band; two black spots on tegulæ; abdomen pale ochreous. Fore wing white, slightly suffused with brown; a black streak from base below median nervure; an antemedial black line excurved below cell and angled inwards on vein 1; the orbicular and reniform with brown centres and incomplete black edges; a postmedial line angled outwards beyond cell; some white specks on costa towards apex; traces of a submarginal line; black streaks on outer area at middle and above outer angle; a series of black marginal specks. Hind wing whitish, fuscous towards outer margin.

Hab. Sultánpur, Kángra (*Graham Young*). *Exp.* 30 millim. Type in coll. Leech.

1810. **Cuculia brevipennis**, n. sp.

Differs from *albescens* in the fore wing being shorter and broader; the colour paler; the orbicular and reniform more prominent, the former more rounded; two subapical dark streaks and one near middle of outer area. Hind wing with the basal area pale ochreous instead of semihyaline white. Underside of fore wing paler fuscous; hind wing uniformly pale, irrorated with brown.

The Sikhim specimen has the hind wing whiter; the Nága specimen has the stigmata indistinct.

Hab. Subáthu, N.W. Himalayas (*Harford*); Sikhim; Nágas. *Exp.* 46 millim. Type in B. M.

1811. **Cuculia stigmatophora**, n. sp.

♂. Pale reddish ochreous; collar with fine dark lines and a black streak from shoulder; vertex of thorax dark red-brown. Fore wing with the costal area suffused with rufous; the pattern as in *albescens*, but red-brown in colour; the orbicular and reniform obsolete, with a red-brown mark between them. Hind wing fuscous. Underside pale, thickly irrorated with ochreous.

Hab. Murree (*Harford*). *Exp.* 44 millim. Type in B. M.

1812. **Cuculia pullata**, *Moore, P. Z. S.* 1881, p. 358; *C. & S.* no. 1529.

♀. Differs from *albescens* in the hind wing being white, with a

large black lunule at the end of cell and very broad black marginal band; the cilia white.

Hab. Dalhousie; Sikhim. *Exp.* 72 millim.

Genus **ACRONYCTA.**

Acronicta, *Ochs. Eur. Schmett.* iv, p. 62 (1816).
Triæna, *Hübn. Verz.* p. 200 (1818).
Hyboma, *Hübn. Verz.* p. 200.
Thalatha, *Wlk. Journ. Linn. Soc.* vi, p. 187 (1862).
Plataplecta, *Butl. A. M. N. H.* (5) i, p. 195 (1878).
*Tycracona, *Moore, Lep. Atk.* p. 95 (1882).
Pseudepunda, *Butl. Trans. Ent. Soc.* 1890, p. 672.

Type, *A. leporina*, Linn., from Europe.
Range. Nearctic, Palæarctic, and throughout the Oriental region.
Eyes naked and without lashes; proboscis fully developed; antennæ simple in both sexes; thorax and abdomen without tufts, the latter with long coarse hair on the dorsal part of proximal segments; legs without spines. Fore wing with the cilia non-crenulate; the inner margin slightly lobed towards base.

SECT. I. (*Acronycta*). Palpi obliquely upturned in male, upturned in female.

1813. **Acronycta anædina**, *Butl. Trans. Ent. Soc.* 1881, p. 19.
Triæna maxima, *Moore, P. Z. S.* 1881, p. 333; *C. & S.* no. 1771.

♂. Whitish grey; palpi black at sides; thorax clothed with hair and scales; abdomen fuscous. Fore wing with some fuscous blotches on costa; a waved black fascia in interno-median interspace from base to below the orbicular; the antemedial double lines very faint; the orbicular and reniform black-edged, with a black streak between them, which is sometimes obsolete; the inner border of reniform double; the postmedial curved double lunulate line prominent, filled in with white and with a black streak crossing it between veins 1 and 2, and sometimes another between veins 4 and 5; a marginal series of black spots. Hind wing fuscous white, with a postmedial line; the cilia whitish. Underside of both wings with a cell-spot and curved postmedial line.

♀. Darker grey; fore wing with the streak between the stigmata and also the upper postmedial streak always present; hind wing darker fuscous; underside with the cell-spot to hind wing large.

Hab. Japan; N.W. Himalayas; Punjab; Rangoon. *Exp.*, ♂ 54–60, ♀ 70 millim.

1814. **Acronycta paucinotata**, n. sp.

♀. Head and thorax grey; abdomen brownish grey. Fore wing grey, with traces of a black subbasal line; an antemedial minutely

dentate black line, with slight claviform mark on its outer edge; a medial striga from costa; traces of a reniform mark, with black lunule on its lower edge; traces of a crenulate postmedial line, with slight black streaks beyond it, chiefly towards apex. Hind wing brownish fuscous; the cilia grey.

Hab. Kashmir (*McArthur*). *Exp.* 50 millim. Type in coll. Leech.

1815. **Acronycta aceris**, *Linn. Syst. Nat.* i, 2, p. 846.

Head, thorax, and fore wing clothed with white and dark brown hair; the abdomen grey. Fore wing with indistinct subbasal, double crenulate ante- and postmedial, and indistinct single lunulate submarginal lines; the orbicular and reniform small, the latter obscured by an indistinct fuscous curved medial line; a series of marginal and cilial brown spots; a black streak from base and two streaks crossing the postmedial line, which are almost absent in the Kashmir specimen. Hind wing white, often with slight pale brown suffusion and the veins brown; a series of pale brown cilial spots.

Larva pale red, with paired dorsal tufts of hair; the head streaked with black; a series of dorsal black streaks and ring-marks.

Hab. Europe; Gurais valley, Kashmir. *Exp.* 38–46 millim.

SECT. II. (*Hyboma*). Palpi upturned in both sexes.

A. *Palpi with the 3rd joint short in both sexes.*

1816. **Acronycta sinens**, *Wlk. Cat.* xi, p. 746; *Hmpsn. Ill. Het.* viii, pl. 144, fig. 6; *C. & S.* no. 1918.
Thalatha sinens, *Wlk. Journ. Linn. Soc.* vi, p. 187.

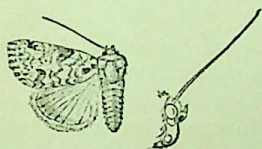



Fig. 134.
Acronycta sinens, ♂. ½.

♂. Pure white; palpi with the 2nd joint black at base. Fore wing with a short black mark from base below median nervure; the subbasal and antemedial double waved fuscous lines indistinct; a double waved medial line arising from a fuscous patch on the costa, with a black line on its inner edge; the orbicular and reniform hardly traceable; a postmedial irregularly waved line arising from a fuscous patch on the costa and with a black patch on it at vein 2; a submarginal lunulate line; a black speck on margin above vein 2. Hind wing with some fuscous suffusion on apical area; underside with a cell-spot and irregularly waved postmedial line.

♀ with the lines of fore wing brownish fuscous; the black streak from base obsolete; abdomen and hind wing brownish fuscous.

Hab. Nilgiris; Moulmein; Borneo. *Exp.*, ♂ 30, ♀ 36 millim.

1817. **Acronycta conjecturalis**, *Swinh. Trans. Ent. Soc.* 1890, p. 222, pl. vii, fig. 10.

♀. Differs from *sinens* in the fore wing having a broad medial diffused blackish band; the patch on postmedial line elongated into a streak; a marginal series of black streaks. Hind wing fuscous.

Hab. Rangoon. *Exp.* 36 millim,

1818. **Acronycta pruinosa**, *Guen. Noct.* i, p. 53; *Moore, Lep. Ceyl.* iii, pl. 144, fig. 3; *C. & S.* no. 1765.

Polia soluta, *Wlk. Cat.* xxxiii, p. 723.

Acronycta consanguis, *Butl. A. M. N. H.* (5) iv, p. 358; *C. & S.* no. 774.

♂. Head and thorax greyish white, the latter clothed with scales; abdomen whitish, with ochreous tinge at base, fuscous towards extremity. Fore wing whitish grey, with subbasal and antemedial indistinct double lines; the orbicular large, round, and white; the reniform with black outline, its inner margin double; the postmedial double lunulate line filled in with white and incurved at vein 2, and with fuscous suffusion beyond it; a series of small marginal lunules; cilia chequered fuscous and white. Hind wing white slightly suffused with fuscous, and with traces of a postmedial line; underside with a cell-spot, a patch on costa above it, and maculate postmedial line.

♀ with the hind wing fuscous brown.

Hab. Japan; N.W. Himalayas; Sylhet; Ceylon; Java. *Exp.*, ♂ 44, ♀ 46 millim.

1819. **Acronycta denticulata**, *Moore, P. Z. S.* 1888, p. 408; *Butl. Ill. Het.* vii, pl. 125, fig. 8.

Dark grey; palpi with the 2nd joint black at base. Fore wing with a black fascia from base below median nervure to outer margin, interrupted at middle; the subbasal and antemedial lines indistinct; the stigmata indistinct; the postmedial line dentate and incurved at vein 2; a marginal series of specks. Hind wing pure white; the veins and margin tinged with fuscous; underside with medial short band from costa and irregularly waved postmedial line.

Hab. Dharmsála. *Exp.* 42 millim.

1820. **Acronycta nigrivitta**, *Hmpsn. Ill. Het.* viii, p. 72, pl. 144, fig. 19.

♂. Pale brown; collar banded with black. Fore wing with the black fascia below medial nervure continuous and curved downwards at middle; an indistinct double antemedial black line; the orbicular and reniform large and indistinct; the postmedial double lunulate line evenly curved; a submarginal diffused waved line and marginal

series of specks. Hind wing ochreous white, with broad marginal fuscous band. Underside with submarginal fuscous band to both wings.

Hab. Nilgiris. *Exp.* 35 millim.

1821. **Acronycta bicolor,** *Moore, P. Z. S.* 1881, p. 332; *C. & S.* no. 1767.

Head, thorax, and fore wing fuscous black, irrorated with grey scales; the last with double subbasal and antemedial waved black lines; the orbicular and reniform indistinct; cilia chequered black and fuscons. Hind wing pure white; the cilia slightly tinged with fuscous.

Hab. N.W. Himalayas. *Exp.* 48 millim.

B. *Palpi with the 3rd joint long and reaching above vertex of head in female.*

1822. **Acronycta fasciata,** *Moore, Lep. Ceyl.* iii, p. 5, pl. 144, fig. 4; *C. & S.* no. 1773.

Hyboma divisa, *Moore, P. Z. S.* 1888, p. 409; *Butl. Ill. Het.* vii, p. 45, pl. 125, fig. 7.

Head and thorax grey, suffused with fuscous; the 2nd joint of palpi black at base; shoulders with a black stripe; abdomen fuscous. Fore wing grey suffused with fuscous, especially on basal inner area and beyond the middle; the subbasal and antemedial double waved lines indistinct; a black streak below median nervure from base to outer margin interrupted at middle; the orbicular and reniform large, the former with a whitish ring inside the black margin; the postmedial double lunulate line incurved at vein 2. Hind wing whitish fuscous in male, darker in female; underside with cell-spot and postmedial line.

Hab. Kángra; Dharmsála; Ceylon; Rangoon. *Exp.*, ♂ 36, ♀ 42 millim.

*1823. **Acronycta ? obliqua,** *Moore, Lep. Atk.* p. 95; *Waterh. Aid,* ii, pl. 118; *C. & S.* no. 1647.

Head and thorax pinkish grey; palpi and base of collar dark brown. Fore wing pinkish grey, irrorated with fuscous; a short indistinct subbasal line and indistinct waved ante- and postmedial brown lines; a very irregular dark brown fascia from middle of costa to centre of outer margin; the outer area suffused with brown and with a pale irregular submarginal line. Abdomen and hind wing pale fuscous; the latter with pale marginal line.

Hab. Sikhim. *Exp.* 32 millim.

Genus CORYTHURUS.

Corythurus, *Hmpsn. Ill. Het.* ix, p. 112 (1893).

Type, *C. nocturnus*, Hmpsn.

Range. Ceylon; Tenasserim.

♂. Eyes naked and without lashes; palpi slender, curved, and extending backwards over vertex of head, the 3rd joint buried in very long hair from the end of the 2nd joint; antennæ almost simple; thorax and abdomen smoothly scaled, the latter with immensely developed tubular anal tuft; tibiæ without spines. Fore wing with the apex rounded; the cilia non-crenulate.

♀ with the palpi held far apart, naked, the 3rd joint upturned and long; abdomen with no anal tuft.

1824. **Corythurus nocturnus**, *Hmpsn. Ill. Het.* ix, p. 113, pl. 165, figs. 4, 10.

♂. Head and thorax pale rufous brown; the collar darker; abdomen fuscous. Fore wing reddish grey, with indistinct double subbasal, ante- and postmedial lines, a dark rufous and fuscous patch between thet wo former, obsolete towards inner margin; a large rufous submarginal patch also obsolete towards inner margin, and edged by a waved whitish submarginal line and crossed by a black streak from end of cell to the submarginal line; two short black streaks to near centre of outer margin. Hind wing fuscous brown.

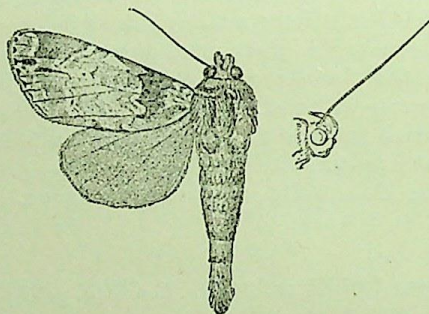



Fig. 135.—*Corythurus nocturnus*, ♂. 1/1.

♀. Much greyer, with the patches on fore wing fuscous black; the lines more distinct; some patches of olive suffusion and an indistinct reniform spot; underside of fore wing with the cilia white intersected with fuscous.

The Tenasserim female is darker; the fore wing more uniformly varegiated with dark grey and olive and without the dark patches.

Hab. Ceylon; Tenasserim Valley. *Exp.*, ♂ 52, ♀ 42–46 millim.

Genus MUDARIA.

Mudaria, *Moore, Cotes' Museum Notes*, iii, p. 68 (1892).

Type, *M. cornifrons*, Moore.
Range. Bengal.
Eyes naked and without lashes; proboscis fully developed; palpi porrect and smoothly scaled, the 3rd joint well developed; frons with a corneous trilobate process; antennæ simple in both sexes; metathorax with slight tufts; abdomen without tufts; tibiæ clothed with long hair and without spines. Fore wing with the apex rounded; the cilia slightly crenulate. Hind wing with vein 5 bent downwards at base, but weak.

1825. **Mudaria cornifrons**, *Moore, Cotes' Museum Notes*, iii, p. 68.

Head, thorax, and abdomen clothed with rufous and grey scales. Fore wing grey, slightly suffused with brick-red; traces of a black subbasal line; an antemedial black line, double at costa, much excurved below the cell, and dentate towards inner margin; a black arc with its open side towards the costa from the inner edge of the almost obsolete orbicular to the outer edge of the reniform; a postmedial excurved lunulate line; an indistinct dentate submarginal line. Hind wing semihyaline white, with traces of fuscous on the margin.

Fig. 136.
Mudaria cornifrons, ♂. 1/1.

Larva destructive to silk-cotton.
Hab. Bengal. *Exp*., ♂ 45, ♀ 38 millim.

Genus TOXOCAMPA.

Toxocampa, *Guen. Ann. Soc. Ent. Fr.* 1841, p. 75.

Type, *T. cracca*, Schiff., from Europe.
Range. Nearctic and Palæarctic regions; throughout India, Ceylon, and Burma.
Eyes naked and without lashes; proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching vertex of head and thickly and evenly scaled, the 3rd short; frons with a short tuft; antennæ minutely ciliated in male. Thorax with a slight crest behind collar; no tufts on metathorax or abdomen; tibiæ without spines. Fore wing with the outer margin much excurved at centre; the cilia not crenulate.

1826. **Toxocampa dorsigera,** *Wlk. Cat.* xxxiii, p. 873; *Hmpsn. Ill. Het.* ix, pl. 162, fig. 18; *C. & S.* no. 2295.
Toxocampa cuculata, *Moore, Lep. Atk.* p. 159; *C. & S.* no. 2294.
Toxocampa orientalis, *Butl. P. Z. S.* 1886, p. 381; *C. & S.* no. 2298.
Toxocampa viciæ, *Butl. Ill. Het.* vii, p. 13 (*nec Hübn.*).

Violaceous grey-brown; the vertex of head and collar jet-black. Fore wing striated with fuscous and with the veins pale; traces of antemedial, medial, and postmedial dark lines, the last highly excurved beyond cell; an inverted **P**-shaped black mark at end of

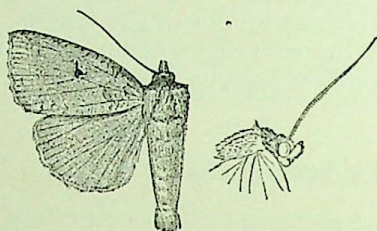



Fig. 137.—*Toxocampa dorsigera*, ♂. 1/1.

cell, with some black specks on its outer edge, sometimes the outline only of this mark being present; a submarginal slightly curved pale-edged line; a marginal series of minute specks. Hind wing fuscous, the cilia tinged with ochreous. Underside with cell-spot, traces of a postmedial line, and broad diffused marginal band.

Small and large forms coexist in the N.W. Himalayas, the former alone occurring in the Nilgiris and Ceylon.

Hab. N.W. Himalayas; Nilgiris; Ceylon. *Exp.* 46–52 millim.

Genus CONSERVULA.

Conservula, *Grote, Bull. Buff. Soc.* ii, p. 17 (1874).
Appana, *Moore, P. Z. S.* 1881, p. 355.

Type, *C. anodonta*, Guen., from N. America.

Range. N. America; Madagascar; Sikhim; Nilgiris; Ceylon.

Eyes naked and without lashes; proboscis fully developed; palpi upturned and reaching vertex of head, thickly scaled, the third joint minute; antennæ simple in both sexes; metathorax with tufts which are well developed in the American typical species, slight in the others; abdomen without tufts; tibiæ without spines. Fore wing with the cilia not crenulate.

1827. **Conservula indica,** *Moore, P. Z. S.* 1867, p. 57; *C. & S.* no. 1975.

♀. Pale reddish chestnut; collar pale-fringed; a pale line on tegulæ. Fore wing with an indistinct subbasal line; a dark speck in base of cell; a broad medial deep chestnut band with pale edges, arising from the subcostal, narrowing towards inner margin, and with a broad pale **V**-mark on it in and beyond the end of cell;

a submarginal slightly curved pale line; cilia dark chestnut. Hind wing reddish fuscous. Underside of both wings with

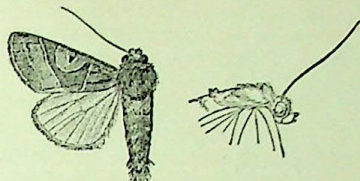



Fig. 138.—*Conservula indica*, ♂. ½.

indistinct dark mark on discocellulars and postmedial and submarginal lines.

Hab. Sikhim. *Exp.* 38 millim.

1828. **Conservula V-brunneum,** *Guen. Noct.* ii, p. 62; *C. & S.* no. 1979.
Appana cingalesa, *Moore, Lep. Ceyl.* iii, p. 548, pl. 214, fig. 6; *C. & S.* no. 1975 A.

Differs from *indica* in being much greyer and less chestnut in colour; the collar and patagia without the pale lines. Fore wing with the submarginal line straight and dark. Hind wing whitish, with the cilia chestnut.

Hab. Nilgiris; ? Pondicherry; Ceylon. *Exp.* 38 millim.

Genus PRODENIA.

Prodenia, *Guen. Noct.* i, p. 159 (1852).

Type, *P. littoralis*, Boisd.

Range. Nearctic region; Mediterranean subregion and throughout the tropical and subtropical zones.

Differs from *Euplexia* in having no tuft behind collar, but only the tufts on metathorax; the scaling much smoother; the legs less hairy; abdominal tufts slight; antennæ ciliated in male.

1829. **Prodenia littoralis,** *Boisd. Faun Ent. Madag., Lép.* p. 91, pl. 13, fig. 8; *Moore, Lep. Ceyl.* iii, pl. 146, figs. 1 *a*, *b* (larva); *C. & S.* no. 2120.
Prodenia ciligera, *Guen. Noct.* i, p. 164.
Prodenia testaceoides, *Guen. Noct.* i, p. 165.
Prodenia glaucistriga, *Wlk. Cat.* ix, p. 197.
Prodenia subterminalis, *Wlk. Cat.* ix, p. 196.
Prodenia declinata, *Wlk. Cat.* xi, p. 723.
Neuria retina, *Freyer, Beitr. Schmett.* v, p. 161.

Pale ochreous, much suffused with dark brown; abdomen paler. Fore wing with some ochreous streaks at base; an angled and oblique subbasal line; a waved and curved antemedial line; the orbicular oblique, with fuscous centre and black edges; the reniform an oblique 'arrow-head' mark; the outer half of median nervure and bases of veins 2, 3, 4, and discocellulars prominently pale;

claviform black; an indistinct lunulate postmedial line excurved beyond cell; a waved submarginal line with black streaks before

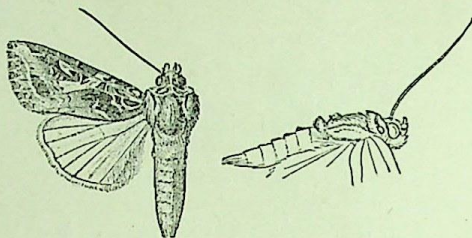



Fig. 139.—*Prodenia littoralis*, ♂. 1/1.

it; cilia with pale streaks through them. Hind wing opalescent and semihyaline white, with dark marginal line.

Larva pale violet-brown, with a subdorsal series of narrow yellow spots with black lunules above them; a lateral series of purplish-black spots centred by a white dot; a sublateral white line. Food-plant *Lantana*.

Hab. Mediterranean subregion and throughout the tropical and subtropical zones of the Old World. *Exp.* 30–45 millim.

1830. **Prodenia minima**, *Swinh. P. Z. S.* 1889, p. 410.

♂. Brownish white, irrorated with dark scales. Fore wing with some dark marks on the indistinct subbasal line; the antemedial waved line interrupted and with the large dark claviform stigma conjoined to it, beyond which is an oblique pale fascia from the median nervure; the orbicular and reniform on a diffused dark triangular patch, the former a white speck, the latter quadrate; the postmedial and submarginal lines indistinctly lunulate, the latter obsolete from the costa to vein 5; a marginal series of dark spots. Hind wing pure white.

Hab. Hydrabad, Sind. *Exp.* 22 millim.

Genus SPODOPTERA.

Spodoptera, *Guen. Noct.* i, p. 153 (1852).

Type, *S. mauritia*, Boisd.

Range. W. Indies; N. & S. America; Africa; N. China and throughout the Oriental and Australian regions.

Differs from *Prodenia* in having immensely developed tufts of hair on the fore tibiæ; cilia slightly crenulate; antennæ almost simple.

1831. **Spodoptera mauritia**, *Boisd. Faun. Ent. Madag., Lép.* p. 92.
Spodoptera nubes, *Guen. Noct.* i, p. 155; *C. & S.* no. 2121.
Spodoptera filium, *Guen. Noct.* i, p. 155.
Prodenia infecta, *Wlk. Cat.* ix, p. 196; *Butl. Ill. Het.* vi, pl. 109, fig. 8.
Prodenia insignata, *Wlk. Cat.* ix, p. 197.

Caradrina triturata, *Wlk. Cat.* x, p. 295.
Agrotis transducta, *Wlk. Cat.* x, p. 344.
Prodenia permunda, *Wlk. Cat.* xi, p. 723.
Laphygma gratiosa, *Wlk. Cat.* xxxii, p. 651.
Laphygma squalida, *Wlk. Cat.* xxxii, p. 652.
Prodenia venustula, *Wlk. Cat.* xxxii, p. 654.
Celæna bisignata, *Wlk. Cat.* xxxii, p. 679.
Agrotis aliena, *Wlk. Cat.* xxxii, p. 694.
Agrotis submarginalis, *Wlk. Cat.* xxxii, p. 699.
Agrotis bisignata, *Wlk. Cat.* xxxii, p. 702.
Hadena obliqua, *Wlk. Cat.* xxxiii, p. 736.

Dark grey-brown with a rusty tinge; abdomen fuscous. Fore wing with the subbasal, antemedial, and postmedial double waved lines indistinct; the orbicular small and ochreous; the reniform blackish; the submarginal line whitish and irregularly waved; a

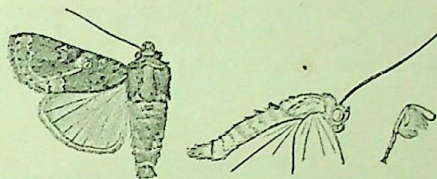



Fig. 140.—*Spodoptera mauritia*, ♂. ½.

whitish patch is often present between the orbicular and reniform and a dark patch on the central marginal area. Hind wing opalescent and semihyaline white, with a dark marginal line.

Hab. W. Africa; Mauritius; Shanghai; and throughout the Oriental and Australian regions. *Exp.* 38 millim.

Genus **CALOGRAMMA.**

Calogramma, *Guen. Noct.* i, p. 165 (1852).

Type, *C. festiva*, Donov.

Range. India; Ceylon; Australia; New Caledonia.

Differs from *Euplexia* in having no tuft behind collar, but only the tufts on metathorax; the legs less hairy. Fore wing with the cilia but slightly crenulate. Hind wing with vein 5 curved at origin and arising below the centre of discocellulars, which are highly angled.

1832. **Calogramma festiva,** *Donov. Epit. Ins. New Holl.* (1805); *Moore, Lep. Ceyl.* iii, pl. 146, fig. 6; *C. & S.* no. 2137.
Polia picta, *Boisd. Voy. de l'Astrolabe, Lép.* p. 241.

Ochreous white; head and thorax suffused with pinkish red. Fore wing with some red on costa at base; numerous ill-defined waved black lines between base and antemedial line; the orbicular and claviform consisting of black rings; a medial pinkish-red band, wide at costa narrowing to inner margin; the reniform with ochreous and black outlines and red centre; the postmedial double

waved lines filled in with ochreous and highly excurved beyond the cell; some black dashes on reddish patches beyond it. Hind wing semihyaline white.

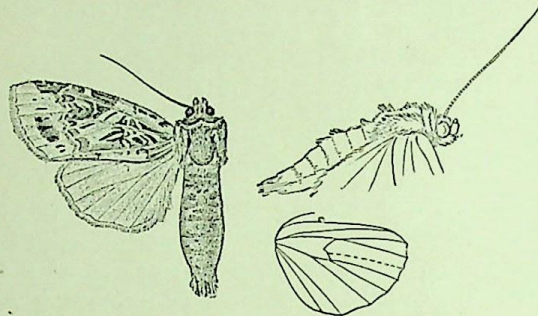



Fig. 141.—*Calogramma festiva*, ♂. 1/1.

Hab. Bengal; Ceylon; Australia; New Caledonia. *Exp.* 48 millim.

Genus AMYNA.

Amyna, *Guen. Noct.* i, p. 406 (1852).
Ilattia, *Wlk. Cat.* xvi, p. 208 (1858).

Type, *A. selenampha*, Guen.

Range. Neotropical region; S. Africa; throughout the Oriental region; Japan; Pacific groups.

Differs from *Euplexia* in having no tufts on thorax; the abdomen slender and tapering to a point, with the dorsal tufts slight; palpi more slender and reaching above vertex of head. Fore wing shorter and broader, the costa more arched towards apex.

SECT. I. (*Amyna*). Fore wing of male with no vesicle in cell.

1833. **Amyna selenampha**, *Guen. Noct.* i, p. 406; *Moore, Lep. Ceyl.* iii, pl. 147, figs. 3, 3 *a*; *C. & S.* no. 2104.
Alamis spoliata, *Wlk. Cat.* xiii, p. 1050.
Amyna subtracta, *Wlk. Journ. Linn. Soc.* vi, p. 189.
Hadena latipennis, *Wlk. Cat.* xxxiii, p. 738.

Fuscous brown with an olive tinge; legs ringed with ochreous. Fore wing with subbasal, ante-, postmedial, and submarginal irregularly waved black lines, the last indistinct; a marginal series of specks; the orbicular and reniform very indistinct, the latter with its lower part obscured by a prominent ochreous spot in the typical form. Hind wing with traces of a postmedial waved line. Underside suffused with whitish; the submarginal line of hind wing prominent and crenulate.

Hab. Natal; Madagascar; China; throughout India and Ceylon; Andamans; Philippines; Borneo; Java. *Exp.* 30–36 millim.

SECT. II. (*Ilattia*). Fore wing of male with a small vesicle in cell, with a small valve of scales over it on underside, the median nervure being slightly curved.

1834. **Amyna octo**, *Guen. Noct.* i, p. 233.
Amyna axis, *Guen. Noct.* i, p. 407.
Poaphila stricta, *Wlk. Cat.* xiv, p. 1476.
Celæna flavigutta, *Wlk. Cat.* xv, p. 1688.
Celæna perfundens, *Wlk. Cat.* xv, p. 1691.
Ilattia cephusalis, *Wlk. Cat.* xvi, p. 209; *Moore, Lep. Ceyl.* iii, pl. 146, figs. 4, 4 *a*; *C. & S.* no. 2088.
Miana inornata, *Wlk. Cat.* xxxii, p. 677.
Celæna obstructa, *Wlk. Cat.* xxxii, p. 679.
Perigea leucospila, *Wlk. Cat.* xxxii, p. 683.
Amyna stellata, *Butl. A. M. N. H.* (5) i, p. 162.
Amyna undulifera, *Butl. A. M. N. H.* (4) xvi, p. 403.
Erastria stigmatula, *Snell. Tijd. v. Ent.* xv, p. 55.
Stridova albigutta, *Wlk. Trans. Nat. Hist. Glasg.* i, p. 354.
Chytoriza tecta, *Grote, Check-list*, p. 33.
Ilattia cupreipennis, *Moore, Lep. Atk.* p. 112; *C. & S.* no. 2090.
Ilattia apicalis, *Moore, Lep. Atk.* p. 112; *C. & S.* no. 2086.
Ilattia renalis, *Moore, Lep. Atk.* p. 113; *C. & S.* no. 2092.
Ilattia calamistrata, *Moore, P. Z. S.* 1881, p. 348; *C. & S.* no. 2087.
Perigea supplex, *Swinh. P. Z. S.* 1885, p. 452; *C. & S.* no. 2102.

Differs from *selenampha* in being much smaller.

The typical form is greyish fuscous; *axis* has a white or ochreous spot on lower part of reniform, whilst a third form has a pale apical patch; *leucospila*, *cupreipennis*, and *renalis* have the head, thorax, and fore wing cupreous red-brown, the first has a white spot at end of cell, which the second is without, whilst *renalis* has a white outline to the reniform not filled in with white, but sometimes with an ochreous spot on it and a large grey patch on the costa before apex.

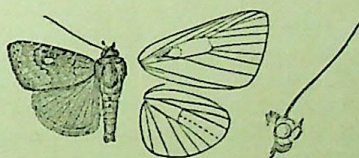



Fig. 142.—*Amyna octo*, ♂. 1/1.

The form *calamistrata* is golden brown, with a single series of white specks on the antemedial line and a double series on the postmedial line; the orbicular white; the reniform figure-of-8-shaped with white outline.

Hab. W. Indies; S. America; Africa; Arabia; Japan; China; throughout India, Ceylon, and Burma; Andamans; Borneo; Pacific groups of islands. *Exp.* 20–30 millim.

*1835. **Amyna? monilis,** *Moore, P. Z. S.* 1881, p. 348, pl. 38, fig. 11; *C. & S.* no. 2091.

Head, thorax, and fore wing ochreous; the last with indistinct pale subbasal, ante- and postmedial sinuous white lines; a prominent white spot at base of cell; the orbicular and reniform with white specks on their edges; a maculate white submarginal line; a marginal series of white-edged black specks; some white specks on the costa towards apex. Hind wing ochreous fuscous, with indistinct cell-spot and postmedial line.

Hab. Sikhim. *Exp.* 25 millim.

Sect. III. Male with the vesicle on fore wing larger, the valve of scales being on the upperside and projecting from the median nervure towards the costa.

1836. **Amyna larentica,** n. sp.

♂. Head, thorax, abdomen, and fore wing clothed with red-brown and black scales, the last with the medial area darkest; the subbasal and antemedial waved black lines fairly prominent; reniform elongate and rufous with pale edges; the postmedial crenulate line excurved beyond the cell; the submarginal irregular line indistinct and broken, expanding into a dark patch below the costa and with some rufous suffusion before it. Hind wing pale fuscous, with curved postmedial line.

Hab. Nágas, 6000 feet (*Doherty*). *Exp.* 26 millim. Type in coll. Elwes.

Genus BERRESA.

Berresa, *Wlk. Cat.* xvi, p. 214 (1858).

Type, *B. turpis*, Wlk.

Range. Throughout India and Ceylon; Fiji; Tonga.

Eyes naked and without lashes; proboscis fully developed; palpi upturned, reaching above vertex of head, the 2nd joint fringed with long hair, the 3rd prominent; antennæ simple and annulated; thorax without tufts; abdomen with slight dorsal tufts. Fore wing short and square; a vesicle in cell of male, with a valve of long scales over it on underside; cilia not crenulate.

1837. **Berresa turpis,** *Wlk. Cat.* xii, p. 794; *C. & S.* no. 1850.
Berresa natalis, *Wlk. Cat.* xvi, p. 214; *Moore, Lep. Ceyl.* iii, pl. 146, fig. 3; *C. & S.* no. 2040.

Dull brown. Fore wing with indistinct subbasal, antemedial, postmedial, and submarginal single waved lines with a few grey scales on them; reniform represented by a small grey spot.

Abdomen and hind wing fuscous; the latter with an indistinct postmedial line.

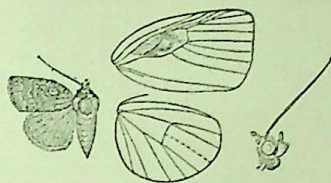



Fig. 143.—*Berresa turpis*, ♂. 1/1.

Hab. Dharmsála; Nilgiris; Ceylon; Fiji; Tonga. *Exp.* ♂ 20, ♀ 26 millim.

Genus CALLOPISTRIA.

Callopistria, *Hübn. Verz.* p. 216 (1818).
Eriopus, *Treitschke, Schmett. Eur.* v, i, p. 365 (1825).
Agabra, *Wlk. Journ. Linn. Soc.* vi, p. 136 (1862).
Cotanda, *Moore, P. Z. S.* 1881, p. 374.
Methorasa, *Moore, P. Z. S.* 1881, p. 374.
Gnamptocera, *Butl. A. M. N. H.* (6) viii, p. 71 (1891).
Haploolophus, *Butl. A. M. N. H.* (6) viii, p. 71 (1891).
Dissolophus, *Butl. A. M. N. H.* (6) viii, p. 71 (1891).
Hyperdasys, *Butl. A. M. N. H.* (6) viii, p. 71 (1891).
Hemipachycera, *Butl. A. M. N. H.* (6) viii, p. 71 (1891).
Rhoptrotrichia, *Butl. A. M. N. H.* (6) viii, p. 71 (1891).

Type, *C. purpureofasciata*, Pill., from Europe.

Range. N. America; W. Indies; Palæarctic region; throughout India, Ceylon, and Burma; Borneo; Java; New Hebrides; Solomons; Fiji.

Eyes naked and without lashes; proboscis fully developed; palpi short, obliquely porrect, and roughly scaled; thorax without tufts; abdomen with dorsal tufts on the proximal segments; fore wing with the cilia non-crenulate; the inner margin with tufts of hairs near base and at outer angle.

SECT. I. (*Methorasa*). Antennæ of male simple and ciliated. Fore wing with the outer margin evenly curved; legs heavily tufted with hair, especially the middle pair.

1838. **Callopistria latreillei**, *Dup. Lep. Fr., Noct.* iv, pt. 1, p. 327, pl. 120, fig. 2; *C. & S.* no. 2226.
Callopistria roseitellum, *Wlk. Cat.* xii, p. 864.
Erastria quieta, *Treit. Schmett.* iii, p. 259.

Head grey; thorax clothed with dark brown, red-brown, and white hairs; abdomen pale fuscous. Fore wing black irrorated with white; subbasal and antemedial pale waved lines with a white spot between them below median nervure; the orbicular

and reniform grey and indistinct; the postmedial waved line excurved beyond cell; a submarginal series of white dashes crossed by a larger subapical dash which is usually pinkish but sometimes white. Hind wing pale fuscous. Underside pale; hind wing with indistinct cell-spot and crenulate postmedial line.

Hab. Europe; Congo; N.W. Himalayas; Nilgiris. *Exp.* 26 millim.

1839. **Callopistria strigilineata,** n. sp.

♂. Head, thorax, and abdomen clothed with red-brown and grey scales. Fore wing bright rufous; a short subbasal line; ante- and postmedial double lines composed of short strigæ, the latter excurved beyond cell; the orbicular and reniform with white outlines, the former round, the latter doubly curved; an ill-defined submarginal band; some white specks on costa towards apex and marginal and cilial series; a white and grey apical patch and a white spot on centre of margin. Hind wing pale; underside with spot at end of cell and postmedial line.

Hab. Sikhim (*Möller*). *Exp.* 34 millim. Type in coll. Elwes.

SECT. II. Antennæ of male contorted at middle, but not thickened or strongly ciliated.

A. (Gnamptocera). *Fore wing with outer margin evenly curved; legs of male not clothed with long hair; the tarsi and inner spurs of mid legs fringed with hair.*

1840. **Callopistria minuta,** *Butl. Ill. Het.* vii, p. 70, pl. 130, fig. 4.

Head and thorax clothed with red-brown mingled with black hairs; abdomen fuscous. Fore wing black, the veins ochreous; the ante- and postmedial lines not much curved and conjoined to the orbicular and reniform, the whole space between them filled in with yellow except a triangular patch bounded by the costa, orbicular, and reniform; a submarginal highly dentate ochreous line. Hind wing dark fuscous; underside with indistinct cell-spot and postmedial line.

Hab. N.W. Himalayas. *Exp.* 20 millim.

1841. **Callopistria minor,** *Hmpsn. Ill. Het.* viii, p. 81, pl. 146, figs. 16, 17.

♂. Differs from *minuta* in being much darker. Fore wing with the veins and space between the ante- and postmedial lines pale reddish; the submarginal line broken up into irregularly disposed blue-grey specks.

♀. Uniformly much darker.

Hab. Nilgiris. *Exp.* 22 millim.

B. (Dissolophus). *Fore wing with the outer margin angled; legs of male clothed with very long tufts of hair, especially the mid tibiæ and tarsi.*

1842. **Callopistria repleta,** *Wlk. Cat.* xii, p. 865; *C. & S.* no. 2221.

Head and thorax clothed with dark brown, ferruginous, and white hair; abdomen paler, with the dorsal tufts ferruginous. Fore wing dark variegated with red; the veins, subbasal, ante- and postmedial lines pale reddish, the antemedial line curved, the orbicular elongate, the postmedial line not much excurved and forming with the reniform, which is elongate with broad white edges, a ?-mark; an indistinct medial dark crenulate line; some irregularly disposed submarginal broad pale, streaks on apical area. Hind wing fuscous; cilia pale, with a dark line through them; underside with cell-spot and crenulate postmedial line.

Hab. Japan; N.W. Himalayas. *Exp.* 40 millim.

Sect. III. (*Hemipachycera*). Antennæ of male slightly knotted and contorted at middle; the tibiæ, tarsi of fore legs, and spurs of mid legs moderately hairy; fore wing with the outer margin angled.

1843. **Callopistria rivularis,** *Wlk. Cat.* xii, p. 867; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 2; *C. & S.* no. 2222.

Head, thorax, and abdomen dark. Fore wing blackish, clouded with grey and irrorated with ochreous; the veins ochreous; a double subbasal ochreous line and similar regularly curved antemedial line; the orbicular and reniform elongate; the postmedial line much excurved beyond the cell and forming with the reniform a ?-mark; some prominent irregularly disposed streaks on apical area; the tufts at base and outer angle long, the latter white. Hind wing dark fuscous; the cilia pale; underside dark, with obscure cell-spot and postmedial line.

Hab. N.W. Himalayas; Nilgiris; Ceylon; Fiji. *Exp.* 30 millim.

1844. **Callopistria yerburii,** *Butl. P. Z. S.* 1884, p. 496.

Differs from *rivularis* in the head and thorax being ochreous; the abdomen and hind wing much paler. Fore wing with the antemedial line slightly angled on median nervure; the postmedial line more excurved at vein 4: the apical streaks more diffused; some specimens have a reddish spot beyond the lower angle of cell and the margin reddish.

Hab. Aden; Nilgiris. *Exp.* 32 millim.

1845. **Callopistria duplicans,** *Wlk. Cat.* xii, p. 866; *C. & S.* no. 2218

Differs from *repleta* in the fore wing having the antemedial line

slightly curved; the postmedial line sinuous instead of excurved beyond the cell.

Hab. Formosa; Silhet; Moulmein. *Exp.* 32 millim.

SECT. IV. (*Agabra*). Antennæ of male expanding into a knot at middle, the portion beyond it being curved and more strongly ciliated; tibiæ and tarsi of fore legs clothed with long hair, the spurs of mid tibiæ fringed with hair.

1846. **Callopistria placodoides**, *Guen. Noct.* ii, p. 296; *C. & S.* no. 2225.

Chestnut. Fore wing suffused in parts with purplish white; subbasal, ante- and postmedial dark double lines angled below the costa; the orbicular and reniform elongate and with white edges, the former traversed by an ill-defined curved whitish line, the latter by a similar dark line; a dark sinuous line beyond the postmedial double lines; submarginal and marginal white lines with dark edges, angled at centre and with the area between them suffused with purplish. Hind wing pale fuscous, the cilia whitish; underside with the costal area suffused with red; a cell-spot, postmedial and submarginal lines.

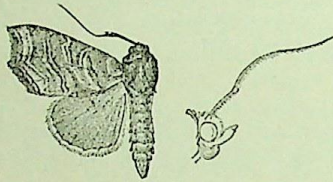



Fig. 144.
Callopistria placodoides, ♂. 1/1.

Some specimens are much darker than others.

Hab. Nilgiris; Borneo; Java. *Exp.* 36 millim.

1847. **Callopistria æthiops**, *Butl. A. M. N. H.* (5) i, p. 200; *id. Ill. Het.* iii, pl. 46, fig. 4.

Differs from *repleta* in the antemedial line of the fore wing being angled below median nervure; the orbicular small and conjoined to the antemedial line; the reniform narrow with fine edges; a white speck beyond lower angle of cell; the postmedial line more excurved beyond the cell; the submarginal streaks finer, one between veins 2 and 3.

Hab. Japan; Nilgiris. *Exp.* 32 millim.

1848. **Callopistria indica**, *Butl. A. M. N. H.* (6) viii, p. 76, pl. ix, fig. 8.

Head and thorax ochreous, with a few black hairs; abdomen fuscous and ochreous. Fore wing blackish, clouded with grey and irrorated with ochreous; the veins ochreous; a double subbasal ochreous line; a similar antemedial line highly angled just below median nervure; the orbicular elongate, some specimens having a yellow patch below it and the reniform; the postmedial line much excurved beyond the cell and forming with the reniform a **?**-mark; some prominent irregularly disposed streaks on apical

area; the tufts at base and outer angle long, the latter formed of white hair. Hing wing fuscous; the cilia ochreous, with a dark line through them; underside with discocellular lunule and postmedial line.

Hab. N.W. Himalayas; Canara; Borneo. *Exp.* 22–30 millim.

Sect. V. (*Rhoptrotrichia*). Antennæ of male with three spatulate hairs on the curved portion; legs very densely clothed with long hair.

1849. **Callopistria recurvata,** *Moore, Lep. Atk.* p. 144; *id. Lep. Ceyl.* pl. 151, fig. 1; *C. & S.* no. 2220.

Head and thorax clothed with dark ferruginous and white hair; abdomen paler, with the dorsal tufts ferruginous. Fore wing differs from *indica* in being more varied with reddish; the veins and lines reddish; the antemedial line more angulated; a medial crenulate black line. Underside of hind wing with more crenulated postmedial line.

Hab. China; throughout India, Ceylon, and Burma; Java; New Hebrides. *Exp.* 40 millim.

Genus ELUSA.

Elusa, *Wlk. Cat.* xvi, p. 202 (1858).
Seria, *Wlk. Journ. Linn. Soc.* vi, p. 193 (1862).
Lugana, *Moore, Lep. Atk.* p. 145 (1882).

Type, *E. ceneusalis*, Wlk., from Borneo.

Range. Sikkim; Assam; Nilgiris; Ceylon; Andamans; Borneo.

Eyes naked and without lashes; proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching vertex of head and roughly scaled, the 3rd short. Antennæ of male bipectinated, the branches bent round and almost forming a cylinder just before the middle, where the shaft is contorted and the branches form a large hollow cup, after which they gradually diminish to apex; thorax without tufts; abdomen with dorsal tufts. Legs with the tibiæ clothed with dense tufts of hair; hind legs clothed with very long hair to the end of the tarsi. Fore wing with the cilia non-crenulate; the inner margin lobed at base, and with a tuft of long scales at outer angle.

1850. **Elusa bipars,** *Moore, P. Z. S.* 1881, p. 373, pl. 38, fig. 7; *C. & S.* no. 1873.
Lugana rufula, *Hmpsn. Ill. Het.* viii, p. 81, pl. 146, figs. 22, 23.
Lugana renalis, *Moore, Lep. Atk.* p. 146; *C. & S.* no. 2229.

♂. Head and thorax very dark red-brown; the cup of antennæ black; abdomen paler. Fore wing very dark red-brown, the outer area brighter; traces of subbasal, ante- and postmedial waved lines

and nearly straight submarginal series of specks, which are darkest at centre; the orbicular a reddish speck; the reniform figure-of-8 shape and grey with dark centre. Hind wing fuscous, or almost white in some Nilgiri and Ceylon specimens.

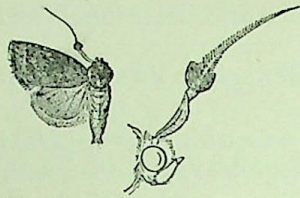



Fig. 145.—*Elusa bipars*, ♂. 1/1.

♀ with the postmedial area of fore wing paler red-brown; the hind wing darker.

Hab. Nágas; Nilgiris; Ceylon; Andamans. *Exp.* 22–26 millim.

1851. **Elusa cyathicornis**, *Wlk. Journ. Linn. Soc.* vi, p. 194.

Differs from *bipars* in being ferruginous. Fore wing uniform in colour, with the lines and stigmata very indistinct; the cilia dark. Hind wing dark reddish.

Hab. Sikhim; Margharita, Assam; Nágas; Borneo. *Exp.* 24 millim.

1852. **Elusa antennata**, *Moore, Lep. Atk.* p. 146; *C. & S.* no. 2228.

♂. Differs from *bipars* in having an obscure curved antemedial line to fore wing; a straight submarginal line close to the margin.

Hab. Sikhim. *Exp.* 28 millim.

Genus **ARBORICORNUS**, nov.

Type, *A. ruber*, Hmpsn.

Range. Nágas.

Palpi long, porrect, and smoothly scaled; antennæ of male bipectinate; eyes naked and not lashed; thorax smoothly scaled; abdomen with dorsal tufts; tibiæ without spines. Fore wing short and broad, the apex rounded; veins 7, 8, 9, 10 stalked. Hind wing with veins 6, 7 stalked.

1853. **Arboricornus ruber**, n. sp.

♂. Head and thorax dark red-brown; abdomen paler, with the dorsal tufts dark. Fore wing dark red-brown, with a glossy texture and almost uniform, except for three pale specks on costa towards apex. Hind wing paler.

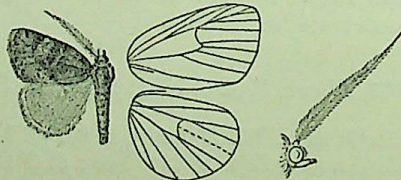



Fig. 146.—*Arboricornus ruber*, ♂. 1/1.

Hab. Nágas, 6000 feet (*Doherty*). *Exp.* 24 millim. Type in coll. Elwes.

Genus CARADRINA.

Caradrina, *Ochs. Eur. Schmett.* iv, p. 80 (1816).
Laphygma, *Guen. Noct.* i, p. 156 (1852).
Dyrzela, *Wlk. Cat.* xv, p. 1758 (1858).
Radinacra, *Butl. A. M. N. H.* (5) i, p. 161 (1878).
Dadica, *Moore, P. Z. S.* 1881, p. 349.
Vapara, *Moore, Lep. Atk.* p. 163 (1882).
Leucocosmia, *Butl. Trans. Ent. Soc.* 1886, p. 394.

Type, *C. taraxaci*, Hübn., from Europe.
Range. Universally distributed.

Eyes naked and without lashes; proboscis fully developed; palpi upturned, the 2nd joint evenly clothed with hair. Thorax and abdomen without tufts; tibiæ without spines; cilia not crenulate.

SECT. I. Palpi with the 3rd joint very short. Male without tufts of hair on the claspers.

A. (Caradrina). *Male without a cleft corneous ridge on vertex of head.*

a. *Antennæ minutely ciliated in male.*

1854. **Caradrina cognata,** *Moore, Lep. Atk.* p. 119; *C. & S.* no. 2010.

Head and thorax pale ochreous brown; palpi with 2nd joint black at sides. Fore wing pale ochreous brown, slightly irrorated with dark scales; subbasal, antemedial, medial, postmedial, submarginal, and marginal indistinct waved lines, the second angled near inner margin, the fourth below the costa; stigmata obsolete or the reniform sometimes small and ochreous with two white specks on it. Abdomen and hind wing pure white, the latter with the veins and margin slightly tinged with fuscous.

Hab. Sikhim; Poona; Khandála; Nilgiris. *Exp.* 24 millim.

1855. **Caradrina exigua,** *Hübn. Samml. eur. Schmett., Noct.* fig. 362; *C. & S.* no. 2122.
Caradrina orbicularis, *Wlk. Cat.* x, p. 294.
Caradrina venosa, *Butl. Ent. Mo. Mag.* xvii, p. 7; *C. & S.* no. 2115.
Spodoptera cilium, *Guen. Noct.* i, p. 156; *C. & S.* no. 2117.
Spodoptera insulsa, *Wlk. Cat.* xxxii, p. 648.
Spodoptera erica, *Butl. P. Z. S.* 1880, p. 675.
Laphygma cycloides, *Guen. Noct.* i, p. 157.
Laphygma macra, *Guen. Noct.* i, p. 157.
Laphygma ? caradrinoides, *Wlk. Cat.* ix, p. 190.
Caradrina flavimaculata, *Harvey, Grote, New Check-list*, p. 30.
Caradrina insignata, *C. & S.* no. 2112 (*nec Wlk.*)

Pale ochreous brown. Fore wing with the subbasal, ante- and postmedial double lines indistinct; the orbicular small and round, pale or ochreous; the reniform usually less prominent, with ochreous or dark centre; the submarginal line pale, angled below the costa, and with some slight dark streaks before it at middle; a

marginal series of dark specks. Hind wing semihyaline opalescent white; the veins and outer margin tinged with fuscous.

The form *cilium* from Java has rather shorter wings.

Hab. Europe; S. Africa; N. and S. America; throughout the Oriental region; Honolulu. *Exp.* 26–32 millim.

1856. **Caradrina kadenii,** *Freyer, Beitr. Schmett.* ii, p. 147, pl. 186 (1836).
Caradrina himaleyica, *Koll. Hügel's Kaschmir*, iv, p. 479.
Caradrina flavirena, *Guen. Noct.* i, p. 250.
Caradrina proxima, *Rambur, Lép. And.* pl. 18, fig. 7.
Caradrina arenacea, *Moore, P. Z. S.* 1881, p. 349; *C. & S.* no. 2105.
Caradrina farinacea, *Moore, P. Z. S.* 1888, p. 411; *C. & S.* no. 2110 B.

Head, thorax, and fore wing grey, the last crossed by six evenly waved indistinct lines; three black specks on middle of costa; reniform prominent and fuscous or brownish; the submarginal line with a brown and ochreous tinge. Hind wing pure white or with a fuscous tinge.

Hab. N.W. Himalayas; Umbálla. *Exp.* 34 millim.

1857. **Caradrina bremusa,** *Swinh. P. Z. S.* 1885, p. 451; *C. & S.* no. 2107.

Differs from *kadenii* in the subbasal and antemedial lines of fore wing being dark; the reniform smaller, less prominent, and indented on inner edge; the postmedial line reduced to a series of specks; the outer area more suffused; the submarginal line not brown and ochreous. Hind wing fuscous white.

Hab. Poona; Nilgiris. *Exp.* 30 millim.

1858. **Caradrina coruscantis,** *Swinh. Trans. Ent. Soc.* 1885, p. 348, pl. 9, fig. 3; *C. & S.* no. 2004.

♀. Differs from *kadenii* in being browner ochreous. Fore wing irrorated with dark specks, the lines very indistinct; the reniform obsolete; series of dark specks on costa and outer margin; the submarginal line dark and diffused. Hind wing ochreous white, with traces of a postmedial line; the outer area suffused with fuscous.

Hab. Chaman, S. Afghanistan. *Exp.* 33 millim,

1859. **Caradrina quadripunctata,** *Fabr. Syst. Ent.* p. 594; *C. & S.* no. 2108.
Noctua grisea, *Rott. Naturf.* ix, p. 138.
Phalæna clavipalpis, *Scop. Ent. Carn.* p. 213.
Noctua cubicularis, *Schiff. Wien. Verz.* p. 72.
Noctua segetum, *Esp. Eur. Schmett.* iv, pl. 150, figs. 4, 5.
Caradrina laciniosa, *Donz. Ann. Soc. Ent. Fr.* 1847, p. 529, pl. 8, fig. 4.
Caradrina grisea, *Eversm. Bull. Soc. Nat. Mosc.* 1848, ii, p. 215.
Caradrina congesta, *Led. Verh. zool.-bot. Ver. Wien*, 1853, p. 372.
Caradrina menetriesii, *Kretschmar, Berl. ent. Zeits.* 1863, p. 432.
Caradrina cubicularis, var. cinerascens, *Tengström, Cat.* p. 309.

Caradrina hügeli, *Feld. Reis. Nov.* pl. 109, fig. 13; *C. & S.* no. 2111.

Caradrina belucha, *Swinh. Trans. Ent. Soc.* 1885, p. 348, pl. 9, fig. 2; *C. & S.* no. 2106.

Radinacra placida, *Moore, Lep. Ceyl.* iii, p. 30; *C. & S.* no. 1965.

Differs from *kadenii* in being pale ochreous. Fore wing with the waved lines more prominent; the reniform smaller; a series of dark streaks on costal half of submarginal line. Hind wing pure white, with slight dark margin.

Fig. 147.—*Caradrina quadripunctata*, ♂. 1/1.

Hab. Europe; S. Africa; Quetta; Bengal; Ceylon. *Exp.* 30 millim.

1860. **Caradrina delecta**, *Moore, P. Z. S.* 1881, p. 349, pl. 38, fig. 15; *C. & S.* no. 2109.

♂. Differs from *quadripunctata* in the transverse lines of the fore wing being darker; the orbicular and reniform black, with reticulated markings of the ground-colour; the submarginal ochreous and brown line straight.

A specimen from Umbálla is more ochreous.

Hab. Umbálla; Sikhim. *Exp.* 33 millim.

1861. **Caradrina obtusa**, *Hmpsn. Ill. Het.* viii, p. 79, pl. 145, fig. 6.

Brownish ochreous. Fore wing with faint traces of subbasal, antemedial, postmedial, and submarginal waved lines; a faint dark spot at lower angle of cell. Hind wing pure white.

Hab. Ganjam; Nilgiris; Bernardmyo, Burma. *Exp.*, ♂ 25, ♀ 28 millim.

1862. **Caradrina sincera**, *Swinh. P. Z. S.* 1889, p. 411.

♀. Brownish ochreous. Fore wing with very faint traces of ante- and postmedial waved lines, and dark spot at lower angle of cell. Hind wing paler. Underside without markings.

Hab. Simla. *Exp.* 36 millim.

1863. **Caradrina uniformis**, *Swinh. Trans. Ent. Soc.* 1885, p. 350, pl. 9, fig. 6; *C. & S.* no. 1919.

Differs from *sincera* in the palpi not being black at sides. Fore wing with a faint submarginal pale line slightly angled below the costa; no spot at lower angle of cell. Hind wing semihyaline white, with an ochreous tinge.

Hab. Quetta. *Exp.* 32 millim.

1864. **Caradrina intaminata**, *Wlk. Cat.* xxxii, p. 698; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 5; *C. & S.* no. 1990.

Head and thorax grey, irrorated with black scales; palpi black

at sides; abdomen fuscous; tarsi black, tinged with white. Fore wing grey, irrorated with black; the subbasal and antemedial lines single, oblique, and arising from black patches on costa; the orbicular and reniform small black spots; a broad diffused medial black band angled on median nervure; the postmedial line minutely dentate; the submarginal irregularly waved line arising from a large blackish patch on costa; a series of marginal black specks. Hind wing semihyaline white, the veins and outer margin tinged with fuscous.

Hab. Nilgiris. *Exp.* 35–38 millim.

1865. **Caradrina bicornis,** *Hmpsn. Ill. Het.* viii, p. 77, pl. 145, fig. 18.

Silvery grey. Fore wing with the subbasal, ante- and postmedial lines very indistinct; the orbicular and reniform taking the shape of black lunules, the former turned towards the costa, the latter towards outer margin and sometimes with dark specks above them on the costa; the orbicular sometimes obsolete; a nearly straight pale submarginal line. Hind wing opalescent white, with more or less fuscous on outer margin.

Hab. Nilgiri plateau. *Exp.* 30 millim.

1866. **Caradrina thwaitesi,** *Moore, Lep. Ceyl.* iii, p. 61, pl. 151, fig. 2; *C. & S.* no. 2227.

Pale brown; head and thorax marked with black. Fore wing pale brown, irrorated and blotched with black; the subbasal line obscured by black blotches; the ante- and postmedial double lines reduced to series of striæ, the latter with diffused black inside it; reniform black and ill-defined; a broad submarginal waved black band from costa to vein 4; a marginal series of prominent black spots. Hind wing dark fuscous. Underside of hind wing with cell-spot and postmedial line.

Some specimens have the fore wing more variegated with chestnut and dark brown; the orbicular and reniform fuscous; the apical part of the submarginal band forming a prominent black patch.

Hab. Ganjam; Ceylon. *Exp.* 30 millim.

1867. **Caradrina transversa,** *Moore, Lep. Atk.* p. 95, pl. 4, fig. 5; *C. & S.* no. 1648.

♂. Head and thorax clothed with black-brown and white scales; abdomen fuscous brown. Fore wing clothed with black-brown and white scales; traces of dark double ante- and postmedial lines, the latter excurved beyond the cell; the orbicular and reniform very indistinct, a submarginal band formed of ill-defined black-brown streaks and blotches. Hind wing fuscous brown.

Hab. Sikhim; Nágas. *Exp.* 32 millim.

1868. **Caradrina postfusca,** *Hmpsn. Ill. Het.* ix, p. 95, pl. 162, fig. 8.

♂. Head and thorax fuscous brown, the scales tipped with white; abdomen fuscous. Fore wing dark fuscous, irrorated with silvery-grey scales; a large black spot in end of cell; traces of double waved ante- and postmedial lines, and a single submarginal line with some black streaks on it towards apex, and white on it above middle and towards outer angle. Hind wing greyish fuscous, with a broad ill-defined marginal band.

Hab. Ceylon. *Exp.* 30 millim.

1869. **Caradrina ochreipuncta,** n. sp.

Head and thorax dark grey-brown; abdomen yellowish brown. Fore wing dark grey-brown, with a slight purplish tinge; the subbasal, antemedial, and submarginal sinuous lines and postmedial crenulate line indistinct; the orbicular represented by a dark speck, the reniform by an ochreous spot; three ochreous specks on costa towards apex. Hind wing pale fuscous; underside with cell-spot and postmedial line.

Hab. Sikhim. *Exp.*, ♂ 40, ♀ 42 millim. Type in coll. Elwes.

1870. **Caradrina rufescens,** n. sp.

♂. Head, thorax, and fore wing ferruginous red, irrorated with black. Fore wing with indistinct double waved ante- and postmedial lines, the latter excurved beyond the cell; a dark dentate medial line; the orbicular and reniform indistinct; an indistinct irregularly dentate submarginal line. Abdomen and hind wing fuscous, the latter with the cilia white and fuscous.

Hab. Ganjam (*Minchin*). *Exp.* 26 millim. Type in coll. Elwes.

1871. **Caradrina furtiva,** *Swinh. P. Z. S.* 1885, p. 448; *C. & S.* no. 1713.

♂. Head and thorax greyish brown; abdomen with an ochreous tinge. Fore wing grey-brown, slightly suffused with ochreous; the veins streaked with black; the orbicular and reniform grey on a blackish patch; cilia streaked with white. Hind wing pale fuscous.

Hab. Poona. *Exp.* 24 millim.

1872. **Caradrina picta,** *Swinh. MS.*

Head, thorax, and abdomen clothed with dark and white scales, the first segment of abdomen with a dorsal tuft of metallic black scales. Fore wing bright chestnut-red, suffused with white scales; indistinct ante- and postmedial waved dark lines; a lunule at end of cell, beyond which is a patch without white scales; red apical and subapical marks. Hind wing brown, with an indistinct large

dark cell-spot; a greyish patch at anal angle, on which is an orange and dark mark. Underside pale, with large dark cell-spot to each wing, very prominent on hind wing; a diffused postmedial rufous band.

Hab. Chekiang, China; Sikhim; Khásis. *Exp.* 28 millim. Type in B. M.

1873. **Caradrina ochreimargo**, n. sp.

♀. Head and thorax pale dusky reddish; abdomen fuscous, with ochreous anal tuft. Fore wing pale dusky reddish, with obliquely sinuous antemedial line; the orbicular a small pale spot; reniform pale with dark centre, and crossed by an indistinct medial line angled at lower end of cell; an excurved minutely dentate postmedial line; traces of an irregularly sinuous submarginal line; a fuscous patch at centre of outer margin; a marginal series of black specks. Hind wing fuscous, the outer area darkest; the margin and cilia bright ochreous. Underside of fore wing fuscous, with broad ochreous margin; hind wing ochreous, with fuscous postmedial line, the area beyond it towards anal angle fuscous.

Hab. Sikhim (*Elwes*). *Exp.* 40 millim. Type in coll. Elwes.

b. *Antennæ bipectinated in male.*

1874. **Caradrina pectinata**, n. sp.

♂. Pale ochreous. Fore wing with indistinct waved subbasal, ante- and postmedial lines; the orbicular and reniform barely traceable; an irregularly dentate indistinct submarginal line. Hind wing white, the margin slenderly fuscous.

Hab. Nágas, 1500 feet (*Doherty*). *Exp.* 28 millim. Type in coll. Elwes.

B. (Leucocosmia). *Male with a cleft corneous ridge clothed with scales on vertex of head; abdomen clothed with woolly pile; build stout.*

1875. **Caradrina reclusa**, *Wlk. Journ. Linn. Soc.* vi, p. 185.
Radinacra thoracica, *Moore, Lep. Ceyl.* iii, p. 31, pl. 148, fig. 4; *C. & S.* no. 1967.
Leucocosmia ceres, *Butl. Trans. Ent. Soc.* 1886, p. 394, pl. ix, fig. 10.
Caradrina euthusa, *Hmpsn. Ill. Het.* viii. p. 79, pl. 145, fig. 1.

♀. Pale chestnut-brown. Fore wing with very faint traces of the usual markings; a prominent ochreous postmedial line slightly curved from the costa to vein 2, and not waved. Hind wing paler.

♂. With the collar and abdomen black; the 2nd joint of palpi black. Fore wing with the basal area clothed with ochreous hair; hind wing with the base yellowish; some specimens have a black speck in cell of fore wing and series of specks on the postmedial line and margin.

Hab. Nilgiris; Ceylon; Borneo; Fiji. *Exp.* 30–34 millim.

SECT. II. Palpi with the 3rd joint somewhat longer.

A. (Radinacra). *Antennæ of male minutely ciliated.*

1876. **Caradrina externa,** *Wlk. Cat.* xxxiii, p. 715; *C. & S.* nos. 1915 & 2110 A.

Dark greyish fuscous. Fore wing with traces of waved subbasal, antemedial, and medial lines; the orbicular and reniform very indistinct; traces of a waved postmedial line with a series of specks on it; a more prominent nearly straight submarginal line. Hind wing paler. Underside with a postmedial line to both wings; hind wing with a cell-spot.

Hab. Dharmsála; Punjab; Sikhim. *Exp.* 28–34 millim.

1877. **Caradrina lineosa,** *Moore, P. Z. S.* 1881, p. 349; *C. & S.* no. 2116.
Graphiphora stellata, *Moore, Lep. Atk.* p. 119; *C. & S.* no. 2018.

Greyish brown. Fore wing with the veins darker; prominent slightly waved subbasal and antemedial dark lines; a medial line angled at lower end of cell; a nearly straight postmedial line; a waved submarginal line; the orbicular represented by a dark speck, the reniform by a white spot with a speck above it. Underside with slight lunule at end of cell and postmedial line to both wings.

Anal tuft in one Japanese male ochreous white.

Hab. Japan; Kúlú; Punjab. *Exp.*, ♂ 32, ♀ 47 millim.

1878. **Caradrina renalis,** *Moore, Lep. Ceyl.* iii, p. 30, pl. 147, fig. 4 *a*; *C. & S.* no. 1966.

♀. Greyish fuscous. Fore wing with indistinct waved subbasal, antemedial, postmedial, and irregular submarginal line; a white speck near base of cell; the orbicular a black ochreous-ringed speck; the reniform an ochreous spot with white specks above and below it; a marginal series of white specks. Hind wing pale, suffused with fuscous; underside with cell-spot and postmedial line.

Hab. Nilgiris; Ceylon. *Exp.* 26 millim.

1879. **Caradrina divisa,** *Moore, Lep. Atk.* p. 123; *C. & S.* no. 1792.

Dark brown, with golden reflections. Fore wing with a subbasal pale line; an antemedial oblique line; the orbicular and reniform large with pale edges; the postmedial line excurved beyond the cell; the submarginal line ochreous and nearly straight; a marginal series of dark specks. Hind wing fuscous; underside with faint cell-spot and postmedial line.

Hab. N.W. Himalayas; Sikhim. *Exp.* 30 millim.

1880. **Caradrina opacaria**, *Swinh. Trans. Ent. Soc.* 1890, p. 264, pl. 8, fig. 3.

Head, thorax, and fore wing bright red-brown, the last with waved subbasal and antemedial lines; the orbicular and reniform small, pale, and indistinct; a medial diffused line; a postmedial line bent outwards beyond the cell, with slight specks on the veins beyond it; an irregularly waved submarginal line. Abdomen and hind wing pale; the latter with the outer margin darker.
Hab. Rangoon. *Exp.*, ♂ 30, ♀ 35 millim.

1881. **Caradrina variana**, *Swinh. P. Z. S.* 1886, p. 444, pl. 40, fig. 10; *C. & S.* no. 1968.

♀. Grey-brown. Fore wing with a subbasal short dark line; a waved antemedial line; an indistinct diffused medial band; very indistinct waved postmedial and submarginal lines. Hind wing pale.
Hab. Mhow. *Exp.* 26 millim.

1882. **Caradrina cervina**, *Moore, P. Z. S.* 1881, p. 348, pl. 38, fig. 12; *C. & S.* no. 2089.

♀. Golden brown. Fore wing with indistinct subbasal waved line; an antemedial oblique line angled below the costa; the orbicular and reniform small and indistinct, the latter with slight ochreous outline; a medial diffused line angled at median nervure; a postmedial line excurved beyond the cell; a slight sinuous submarginal ochreous line. Hind wing fuscous; underside with cell-spot and curved postmedial line.
Hab. Sikhim. *Exp.* 30 millim.

1883. **Caradrina castaneipars**, *Moore, Lep. Atk.* p. 122; *C. & S.* no. 1920.

Head, thorax, and fore wing dark purplish chestnut; the last with traces of ante- and postmedial waved lines and medial band excurved to end of cell; cilia pinkish. Abdomen and hind wing pale, with an ochreous fuscous tinge; underside with speck at end of cell; both wings with traces of a postmedial line.
Hab. Sikhim. *Exp.* 30 millim.

1884. **Caradrina melanosticta**, *Hmpsn. Ill. Het.* viii, p. 79, pl. 145, fig. 13.

♂. Dull brown. Fore wing irrorated with a few black scales; indistinct waved subbasal and antemedial black lines; a postmedial line excurved beyond the cell, dentate on vein 2 and with a black speck beyond it above vein 1; three subapical black specks

and a marginal series of minute specks. Hind wing paler; the underside with a postmedial line.

Hab. Nilgiri plateau. *Exp.* 28 millim.

B. (Dyrzela). *Antennæ of male bipectinate with short branches; fasciculate in female.*

1885. **Caradrina bosca,** *Swinh. Trans. Ent. Soc.* 1890, p. 266.

Dull brown. Fore wing with very indistinct obliquely curved antemedial and medial waved lines, and waved erect postmedial line with a black spot beyond it below the costa; a marginal series of black specks. Hind wing fuscous brown; underside with indistinct cell-spot and waved submarginal line.

Hab. Rangoon; Bassein; Bhámo. *Exp.* 34 millim.

1886. **Caradrina plagiata,** *Wlk. Cat.* xv, p. 1758; *C. & S.* no. 1877.
Oglasa costipannosa, *Swinh. Trans. Ent. Soc.* 1890, p. 266.
Oglasa costiplaga, *Swinh. Trans. Ent. Soc.* 1891, p. 153.

Pale reddish grey-brown. Fore wing with large chocolate sub-semicircular costal patch with pale edges before apex; oblique indistinct sinuous antemedial and medial lines; some black specks between the patch and inner margin; a pale curved submarginal line; a marginal series of black specks. Hind wing fuscous brown; underside with distinct cell-spot and postmedial line.

Hab. Moulmein; Rangoon. *Exp.* 28–32 millim.

SECT. III. Male with the claspers clothed with long hair.

A. *Palpi with the 3rd joint minute; antennæ of male minutely ciliated.*

1887. **Caradrina fasciata,** *Moore, P. Z. S.* 1867, p. 54; *C. & S.* no. 2011.
Graphiphora interstincta, *Moore, Lep. Atk.* p. 118; *C. & S.* no. 2014.

Red-brown, with an ochreous or greyish tinge; pectus and palpi blackish. Fore wing with subbasal and antemedial waved lines; orbicular small, dark, and round, or obsolete; a diffused curved medial line; reniform chestnut, with white specks on its outer edge; postmedial line curved and with a series of specks beyond it; an irregularly waved submarginal pale line; a marginal series of specks. Hind wing fuscous brown. Underside of hind wing with a cell-spot and broad fuscous marginal band.

The form *interstincta* is redder chestnut.

Hab. Sikhim; Bombay. *Exp.*, ♂ 34, ♀ 37 millim.

B. (Vapara). *Palpi with the 3rd joint long; antennæ of male fasciculate.*

1888. **Caradrina mus,** *Hmpsn. Ill. Het.* viii, p. 77, pl. 145, fig. 9.

Greyish fuscous; palpi dark at sides. Fore wing with very indistinct subbasal line; a slightly oblique straight antemedial line; traces of a chestnut reniform stigma; the postmedial line curved and slightly lunulate; the irregularly waved submarginal line indistinct. Underside of fore wing with the outer area greyish; hind wing greyish, with prominent cell-spot and postmedial line.

Hab. Nilgiri plateau. *Exp.* 30 millim.

1889. **Caradrina indistincta,** *Moore, Lep. Atk.* p. 163; *id. Lep. Ceyl.* iii, pl. 159, fig. 7; *C. & S.* no. 2359.

Head and collar chestnut; thorax brownish ochreous; abdomen fuscous. Fore wing brownish ochreous, with traces of transverse lines; the orbicular sometimes represented by a dark speck; reniform with some dark specks round it; an indistinct submarginal line, with some dark diffused marks on each side of it near apex; a marginal series of black specks. Hind wing fuscous; underside with cell-spot and postmedial line.

Hab. Sikhim; Nilgiris; Ceylon; E. Pegu. *Exp.* 40–42 millim.

Genus **TATHORHYNCHUS**, nov.

Type, *T. vinctale*, Wlk.

Range. Aden; throughout Peninsular India; Australia.

Differs from *Caradrina* in the palpi having a long porrect tuft of hair on the second joint produced to a point; antennæ fasciculated; thorax and abdomen slender; legs much longer. Fore wing longer and narrower. Hind wing more ample.

1890. **Tathorhynchus vinctale,** *Wlk. Cat.* xxxiv, p. 1476; *C. & S.* no. 4160.

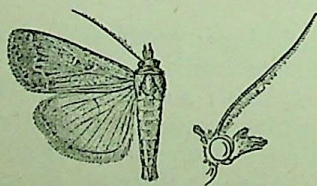



Fig. 148.
Tathorhynchus vinctale, ♂. ½.

Head and thorax grey; abdomen whitish. Fore wing whitish, thickly irrorated and suffused with grey-brown; the outer area brownish; the orbicular represented by an ochreous speck, the reniform by a white speck; traces of a submarginal series of grey and fuscous lunules and marginal series of dark lunules. Hind wing pale fuscous, darkest towards outer margin.

Hab. Aden; Campbellpur; Coimbatore; Australia. *Exp.* 34 millim.

Genus LEUCANIA.

Leucania, *Ochs. Eur. Schmett.* iv, p. 81 (1816).
Donachlora, *Sodoffsky, Bull. Soc. Nat. Mosc.* 1837, p. 14.
Aletia, *Hübn. Verz.* p. 239 (1818).
Hyphilara, *Hübn. Verz.* p. 239.
Borolia, *Moore, P. Z. S.* 1881, p. 334.

Type, *L. comma*, Linn., from the Palæarctic region.

Range. Universally distributed, except the Australian region.

Palpi obliquely upturned, the 2nd joint roughly scaled, the 3rd prominent, short, naked, and depressed; proboscis fully formed; eyes hairy; antennæ minutely ciliated in male; head not deeply retracted into the thorax, which is smoothly scaled; abdomen with scarcely a trace of dorsal tufts on basal segments; tibiæ and tarsi clothed with short hair. Fore wing with veins 8 and 9 anastomosing to form the areole, vein 7 being given off from the end of it, 10 from before the end.

A. *Fore wing with a prominent, short, white* L*-mark or streak on median nervure.*

a. *Males with large areas of metallic scales on the underside of wings, and large paired tufts of black hairs on the basal segment of abdomen below.*

1891. **Leucania decisissima,** *Wlk. Cat.* xxxii, p. 624; *Butl. Ill. Het.* vi, pl. 109, fig. 9; *C. & S.* no. 1667.
Leucania nareda, *Feld. Reis. Nov.* pl. 109, fig. 9.
Leucania lanceata, *Moore, P. Z. S.* 1881, p. 340; *C. & S.* no. 1678.
Leucania pulchra, *Snell. Midd.-Sum., Lep.* iv. p. 41, pl. 4, figs. 3, 4.

♂. Head, thorax, and abdomen reddish ochreous, the last suffused with fuscous. Fore wing ochreous, the veins outlined by rufous streaks, especially those limiting the cell; a white L-mark on median nervure with a black speck inside it; a pale oblique

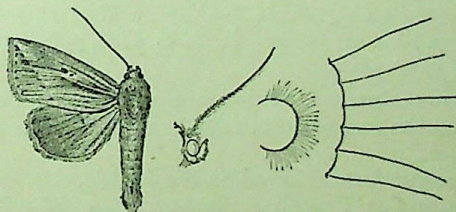



Fig. 149.—*Leucania decisissima*, ♂. 1/1.

fascia from the apex outlined by dark suffusion; antemedial, postmedial, and marginal series of black specks, the first two curved and the first obsolescent. Hind wing ochreous, suffused with fuscous, especially on outer area. Underside with the disk of fore

wing and whole of hind wing except the costa and inner margin clothed with golden-silvery scales; costa of fore wing with a postmedial black spot.

♀. With more fuscous suffusion on the fore wing, especially in the cell and on each side of the apical streak. Underside without silvery areas; hind wing with a black cell-spot and postmedial series of specks.

Hab. Sikhim; Assam; Nilgiris; Ceylon; Andamans; Sumatra. *Exp.* 31 millim.

1892. **Leucania hamifera,** *Wlk. Journ. Linn. Soc.* vi, p. 179; *C. & S.* no. 1676.
Leucania subnitens, *Swinh. Trans. Ent. Soc.* 1890, p. 218, pl. vii, fig. 1.

Differs from *decisissima* in being paler; the whole cell of fore wing filled in with rufous; the ante- and postmedial series of specks absent and the marginal series minute. Hind wing much paler. Underside with no costal spot on fore wing.

Hab. Sylhet; Bhámo; Borneo; Java. *Exp.* 38 millim.

1893. **Leucania inframicans,** *Hmpsn. Ill. Het.* ix, p. 90, pl. 161, fig. 2.

♂. Differs from *decisissima* in the head, thorax, and fore wing being grey with a pinkish tinge without trace of ochreous. Fore wing with the suffusion in the cell and outlining the apical streak olive-brown; the L-mark very prominent; veins 3 and 4 streaked with white, and with black streaks above them; some blackish streaks above inner margin; cilia intersected with white; no series of black specks. Hind wing white; the central outer area suffused with fuscous.

Hab. Pundaloya, Ceylon. *Exp.* 38 millim.

b. *Males without silver areas or black tuft on underside.*

1894. **Leucania rufistrigosa,** *Moore, P. Z. S.* 1881, p. 337; *C. & S.* no. 1691.
Leucania rufescens, *Moore, Lep. Atk.* p. 102; *C. & S.* no. 1690.
Leucania dharma, *Moore, P. Z. S.* 1881, p. 338, pl. 37, fig. 17; *C. & S.* no. 1670.

Differs from *decisissima* in being more suffused with rufous on the upperside and the underside of male being marked as in the female of that species.

A much greyer form is found on the Khásis.

Hab. Dharmsála; Umballa; Sikhim. *Exp.* 34 millim.

1895. **Leucania l-album,** *Linn. Syst. Nat.* xii, p. 850; *Hübn. Samml. eur. Schmett.* iv, fig. 227.
Leucania penicillata, *Moore, P. Z. S.* 1881, p. 335; *C. & S.* no. 1684.
Leucania bistrigata, *Moore, P. Z. S.* 1881, p. 334; *C. & S.* no. 1660.

Differs from *inframicans* in being darker; the abdomen fuscous; hind wing dark fuscous; cilia of both wings with fine pale and dark lines through them. Underside of male without the silvery areas and with a cell-spot and postmedial series of specks to hind wing.

Hab. Europe; N.W. Himalayas; Sikhim; Burma; Nilgiris. *Exp.* 37 millim.

1896. **Leucania vittata**, *Hmpsn. Ill. Het.* viii. p. 69, pl. 144, fig. 4.

♂. Ochreous white. Fore wing with red-brown suffusion in and beyond the cell and beyond the apical oblique fascia; a conspicuous black streak from the base below the median nervure; the white streak on median nervure short, broad, and edged with black; the veins of outer area streaked with white; some black beyond lower portion of the apical fascia; a marginal series of black specks; cilia intersected with white. Hind wing with the outer area suffused with fuscous. Underside pale ochreous; the fore wing suffused with fuscous, except the inner area and veins of outer area; hind wing with the costal and outer areas suffused with fuscous.

Hab. Nilgiris. *Exp.* 37 millim.

B. *Fore wing with the white streak on median nervure long and narrow, reduced to a point or obsolete.*

a. *Fore wing with the ground-colour ochreous.*

1897. **Leucania vana**, *Swinh. P. Z. S.* 1885, p. 453, pl. 27, fig. 9; *C. & S.* no. 2003.

♂. Pale ochreous; palpi black at des; vertex of thorax with a black patch centred with red-brown. Fore wings with the veins pale-streaked; a black mark on lobe of inner margin; a broad black fascia below median nervure from base to vein 2; black patches beyond the cell betwen veins 2, 3 and 4, 6; a black spot at centre of cell; apical streak prominent, with diffused fuscous on each side of it, and with black spots beyond it; cilia pinkish. Hind wing ochreous white. Underside immaculate.

Hab. Poona. *Exp.* 28 millim.

1898. **Leucania howra**, *Moore, P. Z. S.* 1881, p. 337, pl. 37, fig. 16; *C. & S.* no. 1677.

Leucania basilinea, *Swinh. Trans. Ent. Soc.* 1890, p. 220, pl. vii, fig. 6.

♂. Head and thorax brownish ochreous; abdomen white. Fore wing brownish ochreous; a prominent black-brown fascia below median nervure from the base to origin of vein 2; a slight white streak on median nervure; slight brown streaks in inter-

spaces of outer area. Hind wing pure white. Underside immaculate.

Hab. Calcutta; Bhámo, Burma. *Exp.* 34 millim.

1899. **Leucania subsignata**, *Moore, P. Z. S.* 1881, p. 336; *C. & S.* no. 1694.

♂. Differs from *rufistrigosa* in the fore wing being shorter and squarer, with no white streak on median nervure; the hind wing only suffused with fuscous on central outer area. Underside with the postmedial line obsolete on fore wing and replaced by a series of specks on hind wing; no marginal series of specks.

Hab. N.W. Himalayas; Poona. *Exp.* 26 millim.

1900. **Leucania compta**, *Moore, P. Z. S.* 1881, p. 336, pl. 37, fig. 8; *C. & S.* no. 1664.

Leucania canaraica, *Moore, P. Z. S.* 1881, p. 339; *C. & S.* no. 1662.

Leucania nefasta, *Swinh. Trans. Ent. Soc.* 1890, p. 219.

Leucania stramen, *Hmpsn. Ill. Het.* viii. p. 68, pl. 144, fig. 2.

♂. Pale ochreous. Fore wing with slightly darker streaks in the interspaces; the white streak on median nervure narrow; indistinct postmedial and marginal series of black specks. Hind wing pure white and semihyaline; the apical portion of outer margin tinged with fuscous. Underside of fore wing with postmedial costal spot and fuscous suffusion beyond end of cell; hind wing with the costal area ochreous, irrorated with dark scales.

♀. The ante- and postmedial series of specks on fore wing obsolete; apex of hind wing without fuscous suffusion; underside without fuscous suffusion or costal speck.

One specimen from the Nágas has darker hind wings.

Hab. Nágas; Ganjam; Canara; Ceylon; Nilgiris; Bhámo; Rangoon. *Exp.* 28 millim.

1901. **Leucania homopterana**, *Swinh. Trans. Ent. Soc.* 1890, p. 219, pl. vii, fig. 12.

♂. Whitish ochreous. Fore wing with the apex rounded; the veins pale-streaked; the interspaces with fine red-brown streaks; the white streak on median nervure long and narrow. Hind wing white, with some fuscous suffusion on outer margin. Underside without cell-spot or postmedial series of specks to either wing.

Hab. Rangoon. *Exp.* 28 millim.

1902. **Leucania byssina**, *Swinh. P. Z. S.* 1886, p. 442, pl. 40, fig. 6; *C. & S.* no. 1661.

♀. Head, thorax, and fore wing ochreous white, irrorated with dark scales. Fore wing with a black speck at lower angle of cell and postmedial and marginal series of specks, the former curved. Hind wing pure white. Underside immaculate.

Hab. Mhow. *Exp.* 28 millim.

1903. **Leucania abdominalis**, *Moore, P. Z. S.* 1881, p. 338; *C. & S.* no. 1656.

Whitish ochreous. Fore wing with the veins indistinctly pale-streaked; the streak on median nervure long, narrow, and indistinct; the dark suffusion below median nervure and outlining the apical fascia narrow and often slight; an indistinct postmedial curved series of dark specks, and in some specimens a marginal series. Hind wing white suffused with fuscous. Underside grey irrorated with dark scales; fore wing with the disk fuscous; a postmedial spot on costa; hind wing with cell-spot and postmedial series of specks.

Hab. Dharmsála; Khandálá; Bengal. *Exp.* 39 millim.

1904. **Leucania sinuosa**, *Moore, Lep. Atk.* p. 102; *C. & S.* no. 1693.

Head and thorax ochreous white; abdomen fuscous, ochreous at extremity. Fore wing ochreous white; a diffused dark brown streak along median nervure, expanding from beyond end of cell to the outer margin below apex; a black spot at centre of cell; a white streak on median nervure expanding into a spot at the angle of cell, often disconnected from the streak; denticulate ante- and postmedial curved black lines; a series of dark marginal and cilial spots. Hind wing dark fuscous. Underside with postmedial and marginal series of black specks; hind wing with a prominent cell-spot.

One specimen from E. Pegu is slightly redder; the dark orbicular and reniform stigmata larger; the ante- and postmedial sinuous lines much less prominent.

Hab. Dharmsála; Sikhim; E. Pegu. *Exp.* 38 millim.

1905. **Leucania denticula**, *Hmpsn. Ill. Het.* ix, p. 90, pl. 161, fig. 10.

♀. Differs from *sinuosa* in wanting the dark brown fascia below median nervure of fore wing and beyond the cell, so that the dark quadrate reniform stands out as conspicuously as the orbicular; the white on median nervure almost obsolete.

Hab. Ceylon. *Exp.* 44 millim.

1906. **Leucania exempta**, *Wlk. Cat.* xi, p. 710; *C. & S.* no. 1671.
Leucania costalis, *Moore, P. Z. S.* 1877, p. 603, pl. 59, fig. 11; *C. & S.* no. 1666.

♀. Differs from *denticula* in the reniform stigma being rufous; the ante- and postmedial lines less prominent; the hind wing paler.

Hab. Sikhim; Malabar; Ceylon; Burma; Andamans. *Exp.* 38 millim.

1907. **Leucania v-album**, *Hmpsn. Ill. Het.* viii, p. 69, pl. 144, fig. 10.

Differs from *sinuosa* in the fore wing being slightly suffused

with ferruginous in parts; a short dark streak on median nervure from the base; the area in, beyond, and above end of cell suffused with dark brown, disconnected from the dark mark on margin below apex, and enclosing the ochreous orbicular and reniform stigmata, which are conjoined into a broad V-shaped mark; the ante- and postmedial lines waved and indistinct. Underside more uniformly suffused with fuscous.

Hab. Nilgiris. *Exp.* 34 millim.

b. *Fore wing with the ground-colour brownish ochreous or olive-brown.*

1908. **Leucania nainica**, *Moore, P. Z. S.* 1881, p. 337, pl. 37, fig. 15; *C. & S.* no. 1682.
Leucania griseofasciata, *Moore, P. Z. S.* 1881, p. 339; *C. & S.* no. 1675.
Leucania percisa, *Moore, P. Z. S.* 1888, p. 410.
Leucania commoides, *Butl. Ill. Het.* vii, p. 8 (*nec Guen.*).
Leucania irrorata, *Moore, P. Z. S.* 1888, p. 409.

Differs from *abdominalis* in being more or less irrorated with fuscous; the apical fascia of fore wing almost obsolete and only extending to vein 5.

The form *nainica=griseofasciata* has an olive-brown tinge; the hind wing and underside dark fuscous, whilst *percisa=irrorata* is paler and ochreous.

Hab. N.W. Himalayas; Khásis. *Exp.* 39 millim.

1909. **Leucania semiusta**, *Hmpsn. Ill. Het.* viii, p. 69, pl. 144, fig. 17.

♀. Fore wing more acute at apex; whitish, with a slight ochreous-brown tinge. Fore wing irrorated with dark scales; a large brick-red and fuscous diffused patch on centre of disk, with traces of the pale orbicular and reniform stigmata on it and conjoined to a fuscous patch on outer margin below the apex. Hind wing smoky black, the costa, inner area, and cilia whitish.

One specimen has the fore wing without markings; the underside of hind wing with large cell-spot and postmedial line.

Hab. Nilgiris. *Exp.* 38 millim.

1910. **Leucania modesta**, *Moore, P. Z. S.* 1881, p. 335, pl. 37, fig. 11; *C. & S.* no. 1681.

Differs from *semiusta* in the diffused dark patches of the fore wing being slightly developed: some specimens have a black speck at end of cell and an indistinct sinuous postmedial line; both wings with a marginal series of black specks. Underside with cell-spot to hind wing and postmedial line on both wings.

Hab. Sikhim. *Exp.* 44 millim.

1911. **Leucania loreyi**, *Dup. Lép. France*, iv, p. 81, pl. 105, fig. 7; *C. & S.* no. 1680.
Leucania exsanguis, *Guen. Noct.* i, p. 83; *C. & S.* no. 1672.

Leucania exterior, *Wlk. Cat.* ix, p. 106; *C. & S.* no. 1673.
Leucania designata, *Wlk. Cat.* ix, p. 107; *C. & S.* no. 1669.
Leucania tenebrifera, *Wlk. Cat.* ix, p. 113.
Leucania collecta, *Wlk. Cat.* ix, p. 105; *C. & S.* no. 1663.
Leucania denotata, *Wlk. Cat.* ix, p. 107; *C. & S.* no. 1668
Leucania thoracica, *Wlk. Cat.* ix, p. 106; *C. & S.* no. 1696.
Leucania albistigma, *Moore, P. Z. S.* 1881, p. 337, pl. 37, fig. 9; *C. & S.* no. 1659.

Ochreous. Fore wing with a dark or red-brown suffusion on median nervure and outlining the obscure apical fascia; a postmedial curved series of specks; a white speck at lower angle of cell. Hind wing semihyaline white. Underside immaculate. Some specimens have the head, thorax, abdomen, and fore wing smoky brown, irrorated with dark specks; hind wing with some fuscous on outer margin.

Hab. Europe; throughout India, Burma, and Ceylon. *Exp.* 34–42 millim.

1912. **Leucania fragilis**, *Butl. P. Z. S.* 1883, p. 160; *C. & S.* no. 2005.

Grey-brown. Fore wing with indistinct waved ante- and postmedial lines, the latter curved; a white speck at lower angle of cell. Hind wing pale with a slight brown tinge.

A specimen from the Chindwára district is darker than typical specimens; the larva there does much damage to wheat.

Hab. Simla; Dharmsála; Chindwára district, Central Provinces. *Exp.* 30–32 millim.

c. *Fore wing with the ground-colour pale brown, brick-red, or yellowish; orbicular and reniform stigmata traceable.*

a'. *Males without paired tufts on basal segment of abdomen below.*

1913. **Leucania unipuncta**, *Haw. Lep. Brit.* p. 174 (1803).
Leucania extranea, *Guen. Noct.* i, p. 77, no. 104; *C. & S.* no. 1674.
Leucania antica, *Wlk. Cat.* ix, p. 100.
Leucania convecta, *Wlk. Cat.* xi, p. 711.
Leucania separata, *Wlk. Cat.* xxxii, p. 626.
Leucania adusta, *Moore, P. Z. S.* 1881, p. 335; *C. & S.* no. 1657.
Leucania consimilis, *Moore, P. Z. S.* 1881, p. 336, pl. 37, fig. 19 *C. & S.* no. 1665.
Leucania trifolii, *Butl. Trans. Ent. Soc.* 1882, p. 114.
Leucania saccharivora, *Butl. Trans. Ent. Soc.* 1882, p. 115.

Pale brick-red or very pale brown and irrorated with dark specks and blotches. Fore wing with slight traces of the orbicular and reniform stigmata; a minute white speck at lower angle of cell with a black speck inside it; fairly prominent postmedial and marginal series of black specks, the former curved; an indistinct oblique dark apical streak. Hind wing pale suffused with fuscous, in the red specimens less suffused towards base. Underside of

hind wing sometimes with faint cell-spot and postmedial series of specks.

Hab. Universally distributed. *Exp.* 44–50 millim.

1914. **Leucania pallidicosta.**

Leucania albicosta, *Moore, Lep. Atk.* p. 97; *C. & S.* no. 1702 (præocc.).

Differs from the red form of *unipuncta* in the vertex of head of the costa of fore wing and veins of outer area being whitish.

Hab. N.W. Himalayas; Sikhim; Ceylon. *Exp.* 45 millim.

1915. **Leucania fraterna,** *Moore, P. Z. S.* 1888, p. 410; *Butl. Ill. Het.* vii, pl. 126, fig. 9.

♂. Differs from *pallidicosta* in the vertex of head and abdomen being rufous; fore wing without the postmedial series of specks and apical streak. Underside uniformly suffused with rufous.

Hab. Dharmsála. *Exp.* 47 millim.

1916. **Leucania angulifera,** *Moore, P. Z. S.* 1881, p. 333; *C. & S.* no. 1703.

Reddish ochreous. Fore wing with an antemedial dark line oblique from costa to below cell, where it is acutely angled; reniform ochreous and ill defined; a nearly straight oblique dark postmedial line; a slight marginal shade not reaching apex. Hind wing dark fuscous. Underside with postmedial line to both wings.

Hab. N.W. Himalayas. *Exp.* 34 millim.

1917. **Leucania albivitta,** *Hmpsn. Ill. Het.* viii, p. 68, pl. 144, fig. 16.

♀. Head and thorax reddish brown; abdomen fuscous. Fore wing red-brown; indistinct curved ante- and postmedial waved lines; a short pure white streak on median nervure; faint pale orbicular and reniform stigmata. Hind wing fuscous. Underside with a marginal series of specks; hind wing with prominent cell-spot.

Hab. Nilgiris. *Exp.* 33 millim.

1918. **Leucania rufipennis,** n. sp.

♂. Head and thorax pinkish red; abdomen fuscous, the anal tuft ochreous. Fore wing pinkish red, the veins white, the median nervure and veins 3 and 4 prominently so; a whitish fascia from apex; traces of a postmedial series of black specks. Hind wing fuscous; the cilia pinkish. Underside of fore wing with the disk fuscous; hind wing with cell-spot and postmedial series of specks.

Hab. Manipur (*Doherty*). *Exp.* 36 millim. Type in coll. Elwes.

1919. **Leucania cinnamomea,** *Moore, P. Z. S.* 1881, p. 352, pl. 38, fig. 17; *C. & S.* no. 2032.

♂. Pale rufous. Fore wing with nearly straight ochreous and rufous subbasal, antemedial, postmedial, and submarginal lines, the antemedial outwardly, the postmedial inwardly oblique; the orbicular and reniform very large, with ochreous and rufous outlines, the former oblique; a diffused fuscous medial line; a marginal series of dark specks. Hind wing reddish fuscous; the margin and cilia pale rufous. Underside of both wings with prominent cell-spot and curved postmedial line.

Hab. Sikhim. *Exp.* 42 millim.

1920. **Leucania nigrorenalis,** n. sp.

♀. Head and thorax dirty grey; palpi black at sides; abdomen fuscous. Fore wing brownish grey, irrorated with black; a black spot in cell; a medial band from cell to inner margin; an elongate lunule at end of cell, with a large triangular fuscous patch beyond the lower angle; a sinuous submarginal pale line. Hind wing pale fuscous; underside with cell-spot and traces of postmedial line.

Hab. Sikhim (*Knyvett*). *Exp.* 40 millim. Type in coll. Elwes.

b′. (Aletia.) *Males with a pair of long tufts of hair from base of abdomen on underside.*

1921. **Leucania distincta,** *Moore, P. Z. S.* 1881, p. 333, pl. 37, fig. 4; *C. & S.* no. 1705.

Aletia exanthemata, *Moore, P. Z. S.* 1888, p. 410; *Butl. Ill. Het.* vii, pl. 126, fig. 6.

Head and thorax reddish yellow, irrorated with black specks; collar with a dark line; abdomen pale with a reddish tinge, and blackish dorsal spot on first segment; the tufts on underside black in male. Fore wing bright yellow, irrorated and suffused with rufous and a few black scales; indistinct ante- and postmedial curved lines; orbicular and reniform stigmata yellow and fairly well-marked; a slight white streak on median nervure at end of cell; a slight dark apical streak; a marginal series of black specks. Hind wing pale, suffused with fuscous. Underside pale with pinkish suffusion; a marginal series of specks; fore wing with postmedial spot on costa; hind wing with cell-spot and postmedial series of specks.

Hab. Dharmsála; Sikhim. *Exp.* 38 millim.

1922. **Leucania obscura,** *Moore, Lep. Atk.* p. 97; *C. & S.* no. 1706.

Aletia rudis, *Moore, P. Z. S.* 1888, p. 411; *Butl. Ill. Het.* vii, pl. 126, figs. 7, 8; *C. & S.* no. 1708.

Head, thorax, and abdomen dull brick-red, irrorated with fuscous; the anal tuft ochreous, the tufts on underside black in male. Fore wing dull brick-red, irrorated with fuscous; a white speck on a blackish spot at end of cell, sometimes almost

obsolete; traces of a postmedial series of specks and apical streak; veins of outer area slightly tinged with white. Hind wing pale fuscous, palest at base. Underside of hind wing with cell-spot and postmedial series of specks.

Hab. Simla; Dharmsála; Sikhim; Ceylon; Nágas; E. Pegu. *Exp.*, ♂ 40, ♀ 44 millim.

1923. **Leucania corrugata**, n. sp.

♀. Brownish grey. Fore wing slightly irrorated with dark scales; an antemedial series of black specks; a pure white spot at lower angle of cell, with an indistinct ochreous spot above it on a reddish patch; a crenulate postmedial line. Hind wing suffused with fuscous; the cilia whitish. Underside whitish, irrorated with dark scales.

Hab. Simla (*Harford*). *Exp.* 40 millim. Type in B. M.

1924. **Leucania reversa**, *Moore, Lep. Ceyl.* iii, p. 6, pl. 144, fig. 5; *C. & S.* no. 1707.

Head and thorax pale brown; abdomen pale. Fore wing grey-brown, slightly suffused with red-brown; an antemedial outwardly oblique waved dark line; orbicular and reniform stigmata pale and fairly prominent; a curved lunulate postmedial line; a marginal series of specks. Hind wing pale, suffused with fuscous on outer area Underside with postmedial black costal spot to fore wing; both wings with lunulate postmedial line and marginal series of specks.

Hab. Simla; Sikhim; Ganjam; Nilgiris; Ceylon; E. Pegu. *Exp.*, ♂ 30, ♀ 38 millim.

1925. **Leucania fasciata**, *Moore, P. Z. S.* 1881, p. 334, pl. 37, fig. 12; *C. & S.* no. 1700.
Borolia furcifera, *Moore, Lep. Atk.* p. 98, pl. 4, fig. 6; *C. & S.* no. 1701.

♀. Pale reddish brown. Fore wing with some reddish suffusion along median nervure, and a short dark streak from the base below it; traces of an antemedial and a more pronounced curved double series of postmedial specks; faint traces of pale orbicular and reniform stigmata; a marginal series of specks. Hind wing dark fuscous; underside with cell-spot and postmedial line.

Hab. Sikhim. *Exp.* 40 millim.

d. *Fore wing with the ground-colour brown; reniform and orbicular stigmata absent.*

1926. **Leucania rufula**, n. sp.

Dark red-brown; fore wing with the veins pale-streaked; an indistinct curved postmedial series of specks; an obscure apical streak; hind wing fuscous.

Hab. Shillong. *Exp.* 37 millim. Type in B. M.

1927. **Leucania nigrofasciata**, n. sp.

♂. Pale brown. Fore wing with a prominent black streak from base below median nervure; the veins pale; dark streaks in the interspaces towards outer margin; costa grey, speckled with black. Hind wing fuscous. Underside with the fore wing and costa of hind wing brown.

Hab. Kúlú. *Exp.* 40 millim. Type in coll. Elwes.

e. *Fore wing with the ground-colour violaceous or rosy grey.*

a'. *Fore wing with vein* 1 b *not clothed with long scales on underside in male.*

1928. **Leucania albicosta**, *Moore, P. Z. S.* 1881, p. 338, pl. 37, fig. 10; *C. & S.* no. 1658.
Leucania nigrilineosa, *Moore, Lep. Atk.* p. 103; *C. & S.* no. 1683.
Leucania micacea, *Hmpsn. Ill. Het.* viii, p. 67, pl. 144, fig. 8.
Leucania duplicata, *Butl. Ill. Het.* vii, p. 8.
Leucania prominens, *Moore, P. Z. S.* 1881, p. 339 (*nec Wlk.*); *C. & S.* no. 1688.
Leucania albivenata, *Swinh. Trans. Ent. Soc.* 1890, p. 217.
Leucania bifasciata, *Moore, P. Z. S.* 1888, p. 410; *Butl. Ill. Het.* vii, p. 51, pl. 126, fig. 13.

Differs from *abdominalis* in the head, thorax, and fore wing being of a violaceous grey or in the form *duplicata=prominens=albivenata* with a rosy tinge instead of violaceous; *bifasciata* also has a rosy tinge, and has the basal, costal, and inner area of fore wing whitish; the apical fascia obscure; thorax whiter.

The Nilgiri race *micacea* (28 millim.) is smaller. Some specimens have a cell-spot and postmedial series of specks to hind wing. One specimen from the Nágas has some rufous in cell, and another has the white streak on median nervure short.

Hab. Dharmsála; Sikhim; Khásis; Nágas; Nilgiris; Bernardmyo. *Exp.* 28–39 millim.

1929. **Leucania curvilinea**, *Hmpsn. Ill. Het.* viii, p. 67, pl. 144, fig. 3.

Differs from *albicosta* in having no oblique fascia from the apex of fore wing. Underside immaculate.

Hab. Nilgiris. *Exp.* 30–36 millim.

1930. **Leucania venalba**, *Moore, P. Z. S.* 1867, p. 48; *C. & S.* no. 1698.
Leucania lineatipes, *Moore, P. Z. S.* 1881, p. 335; *C. & S.* no. 1679.

Differs from *albicosta* in the fore wing being less produced at apex; the costa and veins less prominently pale; abdomen and hind wing almost pure white; a marginal series of black specks. Underside immaculate except for a marginal series of minute specks to each wing.

Hab. Dharmsála; Khásis; Ceylon. *Exp.* 34 millim.

1931. **Leucania polemusa,** *Swinh. P. Z. S.* 1885, p. 447, pl. 27, fig. 1; *C. & S.* no. 1686.

♂. Differs from *albicosta* in the fore wing having a black streak from the base below median nervure; the white streak on median nervure shorter; a curved postmedial series of specks; the apical oblique streak obsolete. Hind wing pure white and semihyaline, with a marginal series of black specks. Underside immaculate.
Hab. Poona. *Exp.* 27 millim.

1932. **Leucania uniformis,** *Moore, P. Z. S.* 1881, p. 339; *C. & S.* no. 1697.

♀. Head and thorax violaceous grey. Fore wing violaceous grey, the outer area pinkish; the veins and interspaces slightly streaked with white, especially from end of cell to apex; traces of a postmedial series of specks. Hind wing fuscous grey.
Hab. N.W. Himalayas. *Exp.* 34 millim.

b′. *Underside of vein* 1 b *of fore wing in male clothed with long ochreous scales.*

1933. **Leucania tangala,** *Feld. Reis. Nov.* pl. 109, fig. 12; *C. & S.* no. 1695.
Leucania mediofusca, *Hmpsn. Ill. Het.* viii, p. 68, pl. 144, fig. 9.

♂. Differs from *curvilinea* in the apex of the fore wing being rounded; no marginal series of specks. Abdomen, hind wing, and underside uniform yellowish white.
Hab. Nilgiris. *Exp.* 34 millim.

f. *Fore wing with a broad dark fascia from base to outer margin, or the whole wing except costal area dark.*

1934. **Leucania irrorata,** *Moore, P. Z. S.* 1881, p. 341; *C. & S.* no. 1714.
Axylia fasciata, *Moore, P. Z. S.* 1881, p. 341; *id. Lep. Ceyl.* iii, pl. 144, fig. 6; *C. & S.* no. 1712 (præocc.).
Axylia albivena, *Moore, P. Z. S.* 1881, p. 342; *C. & S.* no. 1711.

Ochreous white; collar fringed with fuscous. Fore wing with a fuscous fascia from the base along median nervure to outer margin, below which is a black streak at base; two black spots at middle of cell and one at lower angle; a double postmedial and single marginal series of dark specks; veins of outer area slightly paler. Hind wing white, with marginal series of specks.

Some specimens have a black streak below base of median nervure and fuscous subapical triangular patch on outer margin; the cilia fuscous.
Hab. Kúlú; Punjab; Ceylon. *Exp.* 30 millim.

1935. **Leucania bifascia,** *Hmpsn. Ill. Het.* ix, p. 91, pl. 161, fig. 6.

Whitish with a slight pink tinge; thorax black-brown; fore wing with a black-brown fascia from base, becoming very broad in and beyond the end of cell; a white speck at lower angle of cell; postmedial and marginal series of specks; veins rather pale. Hind wing pinkish fuscous.

Hab. Ceylon. *Exp.* 31 millim.

1936. **Leucania proleuca.**

Axylia albicosta, *Hmpsn. Ill. Het.* viii, p. 70, pl. 144, fig. 20 (præocc.).

Markings as in *bifascia*, from which it differs in not having the pink tinge; the head and abdomen blackish; the fore wing wholly blackish except the white costal area and some rufous on marginal area.

Hab. Nilgiris; Travancore. *Exp.* 34 millim.

1937. **Leucania irregularis,** *Wlk. Cat.* xi, p. 712; *C. & S.* no. 1721.

Axylia abstracta, *Swinh. Trans. Ent. Soc.* 1890, p. 221, pl. vii, fig. 13.

♂. Brownish ochreous. Fore wing with a dark brown triangular patch occupying the area between lower angle of cell, apex, and outer angle; fine chocolate streaks above and below median nervure and towards the apex; a white spot at lower angle of cell. Hind wing white, the margin suffused with brown. Underside immaculate.

Hab. Moulmein; Bhámo. *Exp.* 30 millim.

Genus **FLOCCIFERA**, nov.

Type, *F. erigida*, Swinh.

Range. Burma.

Eyes naked and without lashes; proboscis fully developed; palpi upturned and smoothly scaled, reaching vertex of head; antennæ of male minutely ciliated; tibiæ without spines; thorax and abdomen without tufts; a pair of tufts of long hair from base of abdomen below.

1938. **Floccifera erigida,** *Swinh. Trans. Ent. Soc.* 1890, p. 221.

Pale red-brown. Fore wing with indistinct subbasal and antemedial waved lines; a black speck at middle of cell, some specks on discocellulars; traces of a narrow diffused medial band angled at lower end of cell; an indistinct postmedial slightly waved line with a series of specks beyond it; an irregularly waved submarginal

line. Hind wing pale, the veins and margins suffused with reddish brown; underside with cell-spot and postmedial series of specks.

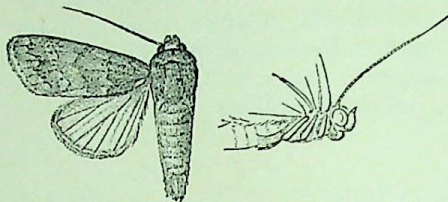



Fig. 150.—*Floccifera erigida*, ♂. ½.

Hab. Thyetmyo, Burma. *Exp.* 44 millim.

Genus ARCILASISA.

Arcilasisa, *Wlk. Cat.* xxxii, p. 470 (1865).
Tiracola, *Moore, P. Z. S.* 1881, p. 351.

Type, *A. sobria*, Wlk.
Range. Throughout India and Ceylon; Australia.
Eyes minutely pubescent; proboscis fully developed; palpi obliquely porrect, with somewhat long hair below; thorax and abdomen without tufts; legs without spines.

SECT. I. (*Arcilasisa*). Antennæ fasciculated in male; the cilia of fore wing slightly crenulate.

1939. **Arcilasisa sobria,** *Wlk. Cat.* xxxii, p. 470; *C. & S.* no. 1699.

Uniform pale grey-brown; fore wing irrorated with dark scales. Underside of hind wing with a black cell-spot.
Hab. Kúlú; Sikhim; S. India. *Exp.* 76 millim.

SECT. II. (*Tiracola*). Antennæ minutely ciliated in male; fore wing with the cilia strongly toothed.

1940. **Arcilasisa plagiata,** *Wlk. Cat.* xi, p. 740; *Moore, Lep. Ceyl.* iii, pl. 148, figs. 1, 1 *a* (larva); *C. & S.* no. 1996.
Agrotis plagifera, *Wlk. Cat.* xi, p. 741.
Agrotis spectabilis, *Wlk. Cat.* xxxii, p. 704.

Pale grey-brown; abdomen fuscous. Fore wing often much suffused with red-brown and irrorated with dark brown; an indistinct waved antemedial line, often almost obsolete; the orbicular obsolete; the reniform almost obsolete, ochreous or fuscous, sometimes on a dark patch; traces of a postmedial curved series of black specks; a submarginal doubly curved ochreous line; a marginal series of black specks. Hind wing fuscous, the cilia whitish.

Larva dull violet-brown, with a few fine dorsal hairs; a few scattered grey dots and a sublateral pale olivaceous band from fourth somite; head and legs violet-grey, the former small; anal somite conical. *Pupa* dark red. Food-plant *Emilia.*

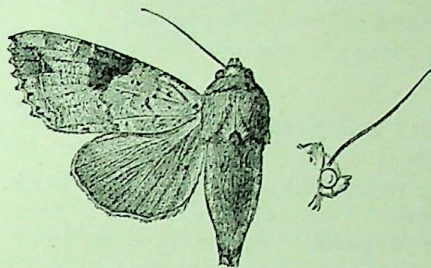



Fig. 151.—*Arcilasisa plagiata*, ♀. 1/1.

Hab. Sikhim; S. India; Ceylon; Borneo; Java. *Exp.* 44–60 millim.

Genus **AUCHMIS.**

Auchmis, *Hübn. Verz.* p. 243 (1818).
Cloantha, *Bdv., Guen. Ann. Soc. Ent. Fr.* viii, p. 509 (1839).

Type, *A. polyodon*, Clerck, from Europe.

Range. N. America; Europe; S. Africa; Amur; Japan; throughout India and Ceylon.

Eyes naked and without lashes; proboscis fully developed. Palpi porrect, the 2nd joint evenly scaled, the 3rd prominent; antennæ ciliated in male. Thorax without tufts; abdomen with small dorsal tufts on proximal segments; mid tibiæ very rarely spined. Wings with the cilia crenulate; hind wing with vein 5 obsolescent.

1941. **Auchmis intermedia,** *Brem. Lep. Ost-Sib.* p. 53.
Auchmis sikkimensis, *Moore, P. Z. S.* 1867, p. 49, pl. 6, fig. 15; *C. & S.* no. 1652.

Head and thorax whitish, marked with red-brown and dark

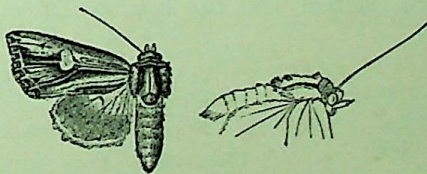



Fig. 152.—*Auchmis intermedia*, ♂. 1/1.

brown; abdomen pale, with a pinkish ochreous tinge. Fore wing whitish; costal area suffused with brown and pinkish; cell with fine dark streaks in it; a prominent black fascia below the cell and

another above inner margin; the inner area and that surrounding the lower part of the reniform, which is white and ochreous, suffused with chestnut and olive browns; some black streaks on the oblique apical fascia, and some on outer margin below the middle; cilia chestnut, intersected by pale teeth. Hind wing white, the veins and outer area suffused with fuscous.

Hab. Amur; Japan; throughout India and Ceylon. *Exp.* 38 millim.

*1942. **Auchmis ? cashmirensis,** *Moore, P. Z. S.* 1881, p. 358; *C. & S.* no. 1821.

Pale ochreous; palpi and legs marked with black. Fore wing with the base speckled with black, and with a black streak above inner margin; a medial ochreous band, bordered by indistinct sinuous double black lines; the orbicular, reniform, and claviform blackish, with ochreous edges; some dentate discal black marks; a patch above outer angle and marginal series of black and white specks. Hind wing pale fuscous; the outer area darker, with crenulate marginal line.

Hab. Kashmir. *Exp.* 32 millim.

Genus **NONAGRIA.**

Nonagria, *Ochs. Eur. Schmett.* iv, p. 82 (1816).
Microsemyra, *Butl. P. Z. S.* 1883, p. 155.

Type, *N. dissoluta*, Tr., from Europe.

Range. Palæarctic region and throughout India, Ceylon, and Burma.

Eyes naked and without lashes; proboscis thin. Palpi obliquely porrect, the 2nd joint evenly scaled, the 3rd prominent; thorax and abdomen without tufts; tibiæ without spines. Wings with the cilia not crenulate; fore wing with the apex somewhat acute; hind wing with veins 6 and 7 stalked or from cell.

SECT. I. Hind wing with veins 3 and 4 from the cell.

A. *Antennæ of male ciliated, of female simple.*

1943. **Nonagria inferens,** *Wlk. Cat.* ix, p. 105; *Moore, Lep. Ceyl.* iii, pl. 145, fig. 3; *C. & S.* no. 1654.
Leucania proscripta, *Wlk. Cat.* ix, p. 106; *C. & S.* no. 1655.
Sesamia fraterna, *Moore, Lep. Atk.* p. 103; *C. & S.* no. 1653.

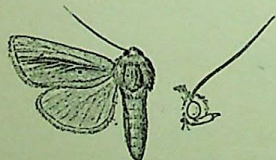



Fig. 153.
Nonagria inferens, ♂. 1/1.

Ochreous. Fore wing with a red-brown suffusion along median nervure and veins 2 to 5; a marginal dark line; cilia paler. Hind wing white.

Hab. Sind; Bombay; Mhow; Ceylon Burma; Flores. *Exp.* 28 millim.

1944. **Nonagria confusa,** *Wlk. Cat.* ix, p. 105; *Moore, Lep. Ceyl.* iii, pl. 145, fig. 4; *C. & S.* no. 1709.

♂. Uniform brownish ochreous; fore wing in some specimens slightly tinged with pinkish and with faint traces of postmedial specks; abdomen and hind wing almost pure white.

Hab. Ceylon. *Exp.* 34 millim.

1945. **Nonagria robusta,** n. sp.

♂. Head and thorax pale red-brown; palpi fuscous; abdomen fuscous, the anal tuft ochreous. Fore wing pale red-brown; a dark streak from base below median nervure; a somewhat indistinct highly waved antemedial line; the orbicular and reniform with slight black outlines, the latter with a black spot on its outer edge; the median nervure and veins 3 and 4 grey; a lunulate postmedial line with black points on the veins; outer area darker, ending obliquely below the apex. Hind wing dark fuscous; cilia rufous; underside with cell-spot and postmedial line.

Hab. Sikhim. *Exp.* 52 millim. Type in coll. Elwes.

1946. **Nonagria submarginalis,** *Hmpsn. Ill. Het.* viii, p. 60, pl. 141, fig. 5.

♂. Yellowish fuscous-brown. Fore wing with some dark scales at end of cell; a pale submarginal line from below apex to inner margin, with black suffusion on its inner side; a marginal series of black specks. Hind wing dark fuscous; the cilia pale.

Hab. Nilgiris. *Exp.* 30 millim.

B. *Antennæ of female serrate.*

1947. **Nonagria fuscovirens,** n. sp.

♀. Head and thorax bright green; abdomen whitish, with slight green suffusion. Fore wing bright green. Hind wing pale fuscous, the outer area pale green. Underside with the disk of fore wing suffused with fuscous.

Hab. Kashmir (*Leech*). *Exp.* 42 millim. Type in coll. Leech.

C. *Antennæ of male bipectinate with long branches, of female with short branches.*

1948. **Nonagria chloroptera,** n. sp.

Differs from *fuscovirens* in having no fuscous on hind wing or underside of fore wing.

Hab. Kashmir (*Leech*). *Exp.* 52 millim. Type in coll. Leech.

SECT. II. Hind wing with veins 3 and 4 stalked.

A. *Antennæ of male ciliated.*

1949. **Nonagria conspersa**, *Moore, P. Z. S.* 1881, p. 340; *C. & S.* no. 1710.

♀. Head, thorax, and fore wing pale ochreous, uniformly irrorated with rufous scales; abdomen and hind wing pure white.
Hab. Calcutta. *Exp.* 44 millim.

B. (Microsemyra.) *Antennæ of male serrate.*

1950. **Nonagria pallida**, *Butl. P. Z. S.* 1883, p. 155; *C. & S.* no. 865.

Ochreous white. Fore wing slightly irrorated with fuscous. Hind wing pure white.
Hab. Mhow. *Exp.* 22 millim.

Genus **ACRAPEX**, nov.

Type, *A. prisca*, Wlk.
Range. Nilgiris; Ceylon.
Differs from *Nonagria* in being more slenderly built; in the fore wing being more produced at apex; vein 7 from or from just beyond end of areole; the hind wing with the outer margin excurved at veins 2 to 4; veins 6, 7 and 3, 4 stalked; vein 5 bent at origin.

1951. **Acrapex prisca**, *Wlk. Cat.* xxxv, p. 1953; *C. & S.* no. 1687.
Senta cramboides, *Moore, Lep. Ceyl.* iii, p. 12, pl. 145, fig. 6; *C. & S.* no. 1718.

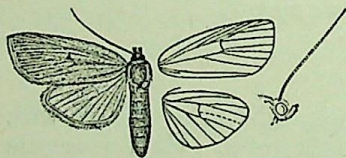



Fig. 154.—*Acrapex prisca*, ♂. ½.

Brownish ochreous; fore wing with the veins outlined with red-brown; a postmedial and slight marginal series of specks; a slight apical streak. Hind wing ochreous white, slightly suffused with fuscous towards outer margin.
Hab. Ceylon. *Exp.*, ♂ 34, ♀ 38 millim.

1952. **Acrapex hamulifera**, *Hmpsn. Ill. Het.* ix, p. 91, pl. 161, fig. 5.

♂. Brownish grey; head and collar with an ochreous tinge; fore wing slightly suffused with ochreous and more so with black; a white hook-shaped mark on median nervure; a pale oblique apical streak; a series of black specks on outer margin. Hind wing pale fuscous. Underside of hind wing with cell-spot and postmedial curved line.
Hab. Ceylon. *Exp.* 34 millim.

1953. **Acrapex leucophlebia**, n. sp.

♂. Differs from *hamulifera* in having no white mark on median nervure of fore wing; the veins much more prominently pale; the apical streak less prominent.

Hab. Nilgiris. *Exp.* 28–31 millim. Type in B. M.

Genus **ACUTIPENNA**, nov.

Type, *A. acuminata*, Hmpsn.
Range. Nilgiris.

Differs from *Acrapex* in the apex of the fore wing being very much produced, vein 7 anastomosing strongly with 8 and 9 to beyond the areole; hind wing with veins 6 and 7 on a long stalk; vein 5 more developed and from near lower angle of cell.

1954. **Acutipenna acuminata**, n. sp.

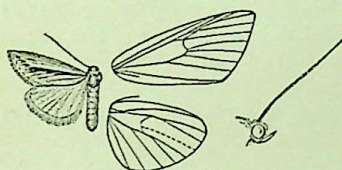



Fig. 155.
Acutipenna acuminata, ♂. ¼.

Head and thorax reddish and dark brown; abdomen whitish. Fore wing reddish brown, with a prominent white fascia from the base through the cell to the apex and a blackish fascia below it; veins pale streaked. Hind wing white.

Hab. Nilgiris. *Exp.* 26 millim. Type in B. M.

Genus **PHYCIDIMORPHA**.

Phycidimorpha, *Hmpsn. Ill. Het.* ix, p. 103 (1893).

Type, *P. rosea*, Hmpsn.
Range. Ceylon.

Eyes naked and without lashes; palpi porrect and reaching beyond the frons; antennæ with long bristles and cilia; thorax and abdomen without tufts; tibiæ naked and without spines. Fore wing very long and narrow; the outer margin very oblique; vein 7 given off after the areole. Hind wing with veins 3 and 4 on a short stalk; 5 straight and from below centre of discocellular.

1955. **Phycidimorpha rosea**, *Hmpsn. Ill. Het.* ix, p. 104, pl. 163, fig. 22.

♂. Head and thorax ochreous white, with slight pink suffusion; abdomen pale ochreous. Fore wing pale ochreous, almost uniformly

suffused with pink, which is rather deepest below the costa; the costa white. Hind wing whitish, slightly suffused with fuscous towards outer margin.

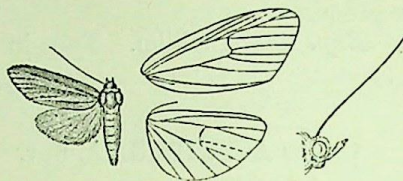



Fig. 156.—*Phycidimorpha rosea*, ♂. 1/1.

Hab. Ceylon. *Exp.* 24 millim.

Genus **PHYCIDOPSIS.**

Phycidopsis, *Hmpsn. Ill. Het.* ix, p. 91 (1893).

Type, *P. albovittata*, Hmpsn.
Range. Ceylon.
Differs from *Nonagria* in the antennæ of the male being heavily bipectinated. Fore wing with the costa arched; the apex quadrate; vein 6 given off after the end of cell.

1956. **Phycidopsis albovittata**, *Hmpsn. Ill. Het.* ix, p. 91, pl. 161, fig. 13.

♂. Head and thorax fuscous; collar and vertex of thorax reddish. Fore wing pale red-brown, with the costal half suffused

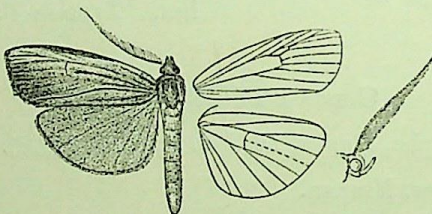



Fig. 157.—*Phycidopsis albovittata*, ♂. 1/1.

with white; a dark brown fascia on the costa from the middle to near apex. Hind wing pale fuscous.
Hab. Ceylon. *Exp.* 42 millim.

Genus **LEOCYMA.**

Leocyma, *Guen. Noct.* ii, p. 212 (1852).
Chasmina, *Wlk. Cat.* ix, p. 146 (1856).
Clinophlebia, *Hmpsn. Ill. Het.* ix, p. 92 (1893).

Type, *L. tibialis*, Fabr., from Formosa, Australia, and the Pacific Groups.

Range. Africa; Japan; China; Formosa; India, Ceylon, and Burma; Australia and the Pacific groups.

Eyes naked and without lashes; proboscis fully developed; palpi upturned, reaching vertex of head, and smoothly scaled; antennæ simple in male; thorax and abdomen smoothly scaled and without tufts; tibiæ without spines. Fore wing with the cilia non-crenulate.

SECT. I. (*Clinophlebia*). Fore wing of male quadrate, the costa somewhat excised, the costal neuration slightly distorted.

1957. **Leocyma sericea**, *Hmpsn. Ill. Het.* ix, p. 92, pl. 161, fig. 7.
Chasmina dianæ, *C. & S.* no. 1783 (*nec Guen.*).

♂. Pure shining white; the palpi and antennæ ochreous; fore

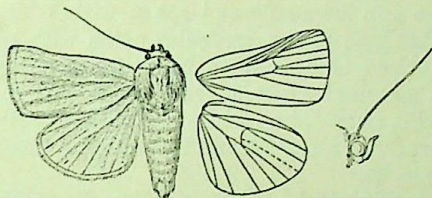



Fig. 158.—*Leocyma sericea*, ♂. $\frac{1}{1}$.

tibiæ and tarsi orange spotted with black; mid tibiæ orange above.

Hab. Ceylon. *Exp.* 40 millim.

SECT. II. (*Leocyma*). Fore wing of normal shape, with the costal neuration not distorted.

1958. **Leocyma cygnus**, *Wlk. Cat.* ix, p. 147; *Butl. Ill. Het.* vi, pl. 110, fig. 3; *C. & S.* no. 1782.

Pure shining white; frons, palpi, and antennæ ochreous.

Hab. Throughout India. *Exp.* 36–44 millim.

1959. **Leocyma judicata**, *Wlk. Cat.* xv, p. 1760; *C. & S.* no. 1838.
Chasmina linea, *Hmpsn. Ill. Het.* viii, p. 73, pl. 145, fig. 3.

♂. Differs from *cygnus* in the palpi and frons being white; tarsi spotted with black. Fore wing with three black specks on the costa; a slightly curved postmedial fuscous line; some submarginal black scales.

Hab. "N. India"; Nilgiris. *Exp.* 28 millim.

960. **Leocyma biplaga**, *Wlk. Cat.* xii, p. 795.
Acontia bimacula, *Wlk. Cat.* xii, p. 796.
Chasmina stigmata, *Hmpsn. Ill. Het.* viii, p. 73, pl. 145, fig. 10.

♂. Differs from *cygnus* in the palpi and frons being white.

Fore wing with a patch on the costa before the apex which is prominent and black in the Chinese and Sikhim form, indistinct and brownish in *stigmata* from the Nilgiris; traces of postmedial and submarginal lines; a few submarginal black scales towards the apex; some specimens have three black specks on the costa.

Hab. N. China; Sikhim; Nilgiris. *Exp.* 30 millim.

SECT. III. Fore wing narrower and more produced at apex.

1961. **Leocyma maculata**, n. sp.

♀. Head and thorax brownish white; palpi black at sides; abdomen fuscous except at base. Fore wing brownish white; indistinct double ante- and postmedial and single medial waved lines; the orbicular a fawn-coloured speck with white outline; a large fawn-coloured, somewhat irregular patch with white outline in and beyond the end of cell; a black speck at apex, another subapical and a marginal series increasing in size towards outer angle. Hind wing semihyaline white; the inner area clothed with fuscous hair; traces of a cell-spot and postmedial line; a marginal series of black specks.

Hab. E. Pegu, 5000 feet (*Doherty*). *Exp.* 32 millim. Type in coll. Elwes.

Genus APSARASA.

Apsarasa, *Moore, P. Z. S.* 1867, p. 665.

Type, *A. radians*, Westw.

Range. Sikhim; Assam; Andamans.

Eyes naked and without lashes; proboscis fully developed; palpi upturned, reaching vertex of head, the second joint smoothly scaled and thickened; antennæ simple; thorax and abdomen without tufts; tibiæ without spines. Fore wing with the cilia not crenulate, the apex rounded, the inner margin lobed and forming with the outer margin an almost continuous curve.

1962. **Apsarasa radians**, *Westw. Cab. Or. Ent.* p. 58, pl. 28, fig. 4.
Apsarasa figurata, *Moore, P. Z. S.* 1877, p. 604; *C. & S.* no. 1781.

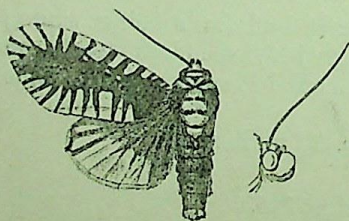



Fig. 159.
Apsarasa radians, ♂. ½.

♂. Head and thorax blue-black; a pale yellow patch on vertex of head and five yellow bars on the thorax; abdomen black, with yellow dorsal specks on the proximal segments, the anal tuft yellow. Fore wing blue-black, with pale yellow subtriangular patches set all round the costal, outer, and inner margins; some small yellow spots in the cell and blue-grey spots beyond it. Hind

wing black with the outer area white, its inner edge irregular and the black area projecting into it at apex and anal angle.

♀ with the anal tuft black; hind wing with the white on outer area much reduced.

The form *figurata* from the Andamans has the markings of the fore wing almost white and a small yellow spot on second joint of palpi.

Hab. Sikhim; Assam; Andamans. *Exp.* 50 millim.

Subfamily ACONTIINÆ.

Eyes naked and without lashes; proboscis fully developed; tibiæ without spines. Hind wing with vein 5 slender, but stronger than in the *Trifinæ*, depressed at origin, the outer margin not produced at its termination.

Almost all the species are of small size and live amongst low herbage.

Larvæ usually with the four pairs of abdominal prolegs fully developed, but sometimes with but three or two pairs.

Key to the Genera.

A. Abdomen with dorsal tufts.
 a. Fore wing with vein 8 given off from 7 and anastomosing with 9 to form an areole.
  a'. Metathorax with paired tufts ...... 1. DIPHTHERA, p. 293.
  b'. Metathorax with a sharp crest...... 2. PERCIANA, p. 295.
  c'. Metathorax without tufts.
   a^2. Hind wing with veins 3 and 4 from cell.
    a^3. Fore wing with the apex rectangular.
     a^4. Abdomen longer than the hind wing; the legs hairy ...... 3. BRYOPHILA, p. 296.
     b^4. Abdomen shorter than the hind wing; the legs smooth. 4. ERASTRIA, p. 300.
    b^3. Fore wing with the apex acute. 25. ZAGIRA, p. 344.
   b^2. Hind wing with veins 3 and 4 stalked .... 6. HYELOPSIS, p. 304.
 b. Fore wing with veins 7, 8, 9 stalked .. 7. TOXOPHLEPS, p. 306.
 c. Fore wing with veins 7, 8, 9, 10 stalked. 5. ERASTRIOIDES, p. 303.
B. Abdomen without dorsal tufts.
 a. Fore wing with vein 8 given off from 7 and anatomosing with 9 to form the areole.
  a'. Frons with a trilobate corneous process .... 10. MEGALODES, p. 309.

b'. Frons without a trilobate process.
a^2. Palpi upturned.
a^3. Fore wing short and broad.
a^4. Hind wing with veins 3 and 4 stalked.
a^5. Fore wing with the apex rectangular .... 8. HYELA, p. 307.
b^5. Fore wing with the apex rounded................. 27. ORUZA, p. 348.
b^4. Hind wing with veins 3 and 4 from cell or on a very short stalk.
a^5. Palpi short, not reaching above vertex of head.
a^6. Fore wing with the cilia non-crenulate, the outer margin evenly curved .. 12. XANTHOPTERA, p. 316.
b^6. Fore wing with the cilia crenulate, the outer margin oblique towards outer angle .... 13. COSMIA, p. 321.
b^5. Palpi long and reaching above vertex of head.
a^6. Fore wing of nearly even width throughout, the apex rounded .... 16. SWINHOEA, p. 324.
b^6. Fore wing triangular, the apex nearly rectangular .... 15. MARIMATHA, p. 324.
b^3. Fore wing more produced and acute at apex .... 9. MICARDIA, p. 309.
b^2. Palpi porrect; frons with a rounded corneous projection .... 11. TARACHE, p. 310.
c^2. Palpi porrect and triangularly scaled .... 26. CORGATHA, p. 347.
b. Fore wing with veins 7, 8 and 9, 10 stalked .... 14. ACONTIA, p. 322.
c. Fore wing with veins 8, 9, 10 stalked.
a'. Fore wing with vein 6 present.
a^2. Fore wing with the outer margin somewhat erect, rarely excised below the apex, which is rectangular .... 17. METACHROSTIS, p. 325.
b^2. Fore wing with the outer margin obliquely curved, the apex produced to a slight point or lobed.. 23. EUBLEMMA, p. 338.
b'. Fore wing with vein 6 absent ...... 21. CINGALESA, p. 336.
d. Fore wing with veins 7, 8, 9 stalked.
a'. Fore wing with veins 10 and 11 from cell.
a^2. Hind wing with the costa excised. 24. TROCTOPTERA, p. 344.
b^2. Hind wing with the costa not excised.
a^3. No frontal tuft; the palpi upturned .... 18. NARANGA, p. 333.
b^3. A sharp frontal tuft; the palpi porrect .... 19. RIVULA, p. 334.

b'. Fore wing with veins 10 and 11 stalked .... 20. TATHODELTA, p. 336.
e. Fore wing with veins 7, 8, 9, 10 stalked.
a'. Hind wing with veins 3 and 4 from cell.
a^2. Palpi not reaching vertex of head . 22. PACHYLEPIS, p. 337.
b^2. Palpi reaching far above vertex of head .... 28. PSEUDACIDALIA, [p. 351.
b'. Hind wing with veins 3 and 4 stalked; palpi slender, oblique, and hardly reaching vertex of head .... 29. MICRÆSCHUS, p. 351.

Genus DIPHTHERA.

Diphtera, *Ochs. Eur. Schmett.* iv, p. 63 (1816).
Canna, *Wlk. Cat.* xxxiii, p. 790 (1865).

Type, *D. orion*, Linn., from Europe.

Range. Nearctic and Palæarctic Regions; Himalayas; Nága Hills.

Palpi obliquely porrect, the second joint clothed with long hair, the third short; antennæ minutely ciliated; thorax without a tuft behind the collar; the metathoracic tufts large; abdomen dorsally tufted.

Larvæ with tufts of hair and forming a cocoon; 4 pairs of abdominal prolegs.

SECT. I. (*Canna*). Patagia produced to long upturned tufts; abdomen with one large dorsal tuft.

1963. **Diphthera pulchripicta**, *Wlk. Cat.* xxxiii, p. 790; *Moore, P. Z. S.* 1867, pl. 6, fig. 10; *C. & S.* no. 1820.

Head and collar brilliant malachite-green; thorax ochreous, with the patagia and metathoracic tufts chestnut; abdomen ochreous white, the dorsal tuft pale. Fore wing malachite-green; a subbasal chestnut line conjoined to a fascia along inner margin as far as the obliquely angled medial band, these chestnut markings

Fig. 160.—*Diphthera pulchripicta*, ♂. ½.

being bordered by white lines; a darker shade from apex to angle of medial band; a marginal chestnut band whitish towards apex and indented at centre and outer angle. Hind wing ochreous white, with some fuscous submarginal suffusion towards apex.

Hab. Sikhim. *Exp.* 36 millim.

1964. **Diphthera malachitis**, *Oberth. Et. Ent.* v, p. 80, pl. iii, fig. 9.
Canna splendens, *Moore, P. Z. S.* 1888, p. 412; *Butl. Ill. Het.* vii, p. 59, pl. 128, fig. 4.

Differs from *pulchripicta* in the white subbasal line of fore wing having green inside it instead of chestnut; a black and white lunule on base of inner margin; the fascia on inner margin not extending to base; no chestnut marginal band; the apical part of margin whitish, with a black white-centred spot at its lower extremity; a white patch with black white-centred spot on it above outer angle. Hind wing with a diffused submarginal fuscous band.
Hab. Askold Island, near Vladivostok; Dharmsála; Sikhim. *Exp.* 40 millim.

1965. **Diphthera prasinaria**, *Wlk. Cat.* xxxii, p. 615; *C. & S.* no. 1763.

Head and thorax emerald-green; palpi black tipped with white, thoracic tufts black-tipped; abdomen white tinged with fuscous, the dorsal tuft black. Fore wing emerald-green; a black suffused basal patch with irregularly waved black and white edge; a broad medial black suffused band with very irregularly waved black and white edges; the reniform represented by a diffused white patch; an irregularly waved submarginal white line with some black on its inner edge; some black specks on costa towards apex; a black spot on outer margin below apex; a series of marginal black specks. Hind wing white; a fuscous band from apex to vein 3; the cilia green. Underside whitish, with prominent black bands from costa near apex to vein 3 on each wing.
Hab. Sikhim. *Exp.* 38 millim.

Sect. II. (*Diphthera*). Patagia not produced; abdomen with small dorsal tufts on proximal segments.

1966. **Diphthera vigens**, *Wlk. Cat.* xxxii, p. 616; *C. & S.* no. 1764.

Head and thorax deep emerald-green; palpi black; thoracic tufts black-tipped; abdomen ochreous suffused with black. Fore wing deep emerald-green, with a black striga from costa near base; a streak below median nervure; an antemedial irregularly waved black white-edged line; orbicular and reniform defined by black lines and incomplete above and below; a black band between them from costa to median nervure; claviform represented by a white streak with black specks at each end of it; a postmedial very irregularly waved black white-edged line with a broad black shade beyond it; some black specks on costa towards apex; a series of marginal specks. Hind wing pale green, with an indistinct irregularly waved postmedial line and diffused fuscous submarginal band. Underside green, with diffused medial and submarginal black bands from costa of each wing to vein 4; hind wing with a postmedial line.
Hab. Kúlú; Sikhim; Nágas. *Exp.* 40 millim.

1967. **Diphthera pallida,** *Moore, P. Z. S.* 1867, p. 46, pl. 6, fig. 6; *C. & S.* no. 1762.

Diphtera fasciata, *Moore, P. Z. S.* 1888, p. 408; *Butl. Ill. Het.* vii, pl. 122, fig. 1.

Differs from *vigens* in being pale silvery green. Fore wing with the black spot beyond the white claviform streak large; the shade beyond the postmedial line slight; the series of specks submarginal instead of marginal; cilia chequered black and green. Hind wing greenish white, with traces of a cell-spot. Underside greenish white, with two short black bands from costa of fore wing and one medial short band from costa of hind wing.

The form *fasciata* has the basal markings of fore wing almost obsolete; the antemedial line obsolescent except the recurved portion on inner margin; the orbicular, reniform, and claviform obsolete; the postmedial line much less prominent with no submarginal specks beyond it; cilia only tipped with black at emarginations.

Hab. Dharmsála; Sikhim. *Exp.* 46 millim.

1968. **Diphthera discibrunnea,** *Moore, P. Z. S.* 1867, p. 46, pl. 6, fig. 14; *C. & S.* no. 1760.

Head and thorax bright green slightly tinged with black; palpi black at sides; abdomen very pale fuscous. Fore wing bright green, with a subbasal black line expanding into a large patch below median nervure; some detached black spots representing the antemedial line; orbicular and reniform almost obsolete, with a blackish band between them from costa to median nervure; a short broad blackish band on outer edge of reniform; a broad blackish waved postmedial band; a series of blackish marginal lunules. Hind wing fuscous white, with indistinct postmedial waved line and broad diffused fuscous submarginal band. Underside with postmedial line and diffused submarginal band to both wings; hind wing with a cell-spot.

Hab. Sikhim; Nágas. *Exp.*, ♂ 36, ♀ 42 millim.

Genus **PERCIANA.**

Perciana, *Wlk. Cat.* xxxiii, p. 812 (1865).

Type *P. marmorea*, Wlk.

Range. Punjab; Sikhim; Manipur.

Palpi obliquely upturned, the 2nd joint reaching vertex of head, the 3rd long and naked; antennæ with fascicles of cilia in male; a sharp crest on metathorax; the patagia with long upturned scales from their ends; abdomen with a very long dorsal tuft on 2nd segment and small tuft on 3rd; a flattened anal tuft; tibiæ moderately hairy. Fore wing with the apex nearly rectangular, the outer margin angled at centre; veins 8 and 9 anastomosing to form the areole. Hind wing with veins 3, 4 and 6, 7 from cell.

1969. **Perciana marmorea**, *Wlk. Cat.* xxxiii, p. 813; *C. & S.* no. 2223.

Brownish ochreous; vertex of head white; collar fringed with black; abdomen with the dorsal tufts black. Fore wing marbled with white, brown, and black; a short basal black line; black subbasal and medial patches on inner margin; the costa speckled

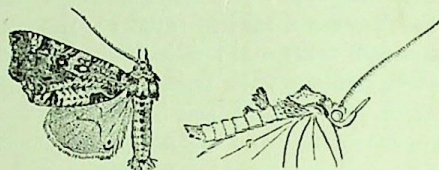



Fig. 161.—*Perciana marmorea*, ♂. 1/1.

with black; a white black-ringed spot in cell and speck at end of it; traces of a waved postmedial line with diffused white beyond it on costal and inner areas; traces of a sinuous submarginal black band with some white on it. Hind wing whitish; the outer area suffused with fuscous; a black mark above anal angle.

Hab. Punjab; Sikhim. *Exp.*, ♂ 34, ♀ 42 millim.

1970. **Perciana flavifusa**, n. sp.

♂. Head reddish brown; thorax and abdomen grey and fuscous. Fore wing grey, slightly irrorated with black; the basal area suffused with pale yellow, the outer with brown; the orbicular minute, the reniform large with a line from it to inner margin; traces of a dentate submarginal line. Hind wing pale fuscous.

Hab. Manipur, 6000 feet (*Doherty*). *Exp.* 28 millim. Type in coll. Elwes.

1971. **Perciana viridinotata**, n. sp.

♂. Head green, the palpi brown; thorax brown and ochreous; abdomen pale, the dorsal tufts green. Fore wing dark red-brown; a short subbasal bright green line; the orbicular and reniform with bright green outlines and patches above them on costa; a large green patch on central inner area crossed by a short lunulate white line; a green spot on costa before apex and another at centre of outer margin; a series of white specks on costa. Hind wing pale brownish. Underside with cell-spot and curved postmedial line.

Hab. Sikhim, 7000 feet (*Möller*). *Exp.* 30 millim. Type in coll. Elwes.

Genus **BRYOPHILA**.

Bryophila, *Treitschke, Eur. Schmett.* v, pt. 1, p. 57 (1825).

Type *B. muralis*, Forst., from Europe.

Range. Nearctic and Palæarctic regions; Himalayas; Khási**s**; Nilgiris; Ceylon and Burma.

Palpi slender and upturned, the third joint reaching above vertex of head; antennæ minutely ciliated; thorax with slight tufts behind collar; abdomen with slight dorsal tufts, and longer than the hind wing; legs hairy.

Larvæ with four pairs of abdominal prolegs.

1972. **Bryophila literata,** *Moore, P. Z. S.* 1881, p. 331; *C. & S.* no. 1775.

Head and thorax white, irrorated with black scales; abdomen fuscous white, the dorsal tufts black. Fore wing white suffused with black; a waved blackish subbasal band edged by black lines; a broad medial blackish band narrowing to inner margin, the double waved antemedial black and white line forming its inner edge; the stigmata indistinct, with a pale round spot between the orbicular and reniform; the waved double black and white postmedial line excurved beyond the cell; a submarginal waved line with diffused black on its inner edge; cilia chequered white and fuscous. Hind wing fuscous, with indistinct cell-spot and postmedial line; cilia white, spotted with fuscous.

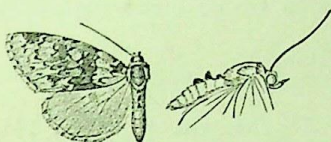



Fig. 162.
Bryophila literata, ♂. ½.

Hab. N.W. Himalayas. *Exp.*, ♂ 32, ♀ 36 millim.

1973. **Bryophila modesta,** *Moore, P. Z. S.* 1881, p. 332; *C. & S.* no. 1777.

♀. Differs from *literata* in being wholly suffused with dirty ochreous brown. Fore wing with the markings fuscous and indistinct; the ante- and postmedial lines dentate. Hind wing fuscous brown; underside with the postmedial line almost obsolete.

Hab. Simla. *Exp.* 30 millim.

1974. **Bryophila virescens,** n. sp.

♂. Differs from *literata* in the ground-colour of the thorax and fore wing being pale blue-green; a black streak between the sub-basal and antemedial lines below median nervure; a prominent submarginal series of irregularly placed black marks.

Hab. Dalhousie (*Harford*). *Exp.* 26 millim. Type in B. M.

1975. **Bryophila lichenea,** *Hmpsn. Ill. Het.* viii, p. 72, pl. 144, fig. 12.

Differs from *literata* in the head, thorax, and fore wing being evenly suffused with fuscous; hind wing with the cilia wholly white; the broken band on underside submarginal instead of postmedial.

Hab. Nilgiri plateau. *Exp.* 30 millim.

1976. **Bryophila nilgiria**, *Moore, P. Z. S.* 1881, p. 332; *C. & S.* no. 1778.

Head white; thorax and abdomen white suffused with fuscous. Fore wing white, more or less suffused with black; subbasal and antemedial waved black lines, in some specimens with blackish marks between them; the orbicular a prominent black-ringed white speck; reniform with indistinct outline; claviform a curved line; the area round the stigmata sometimes suffused with black; a postmedial waved line highly excurved beyond cell and with some more or less prominent diffused marks beyond it; some black spots on costa. Hind wing suffused with black; cilia of both wings chequered black and white. Underside of fore wing black, with a white postmedial mark on costa; hind wing white, with black postmedial line.

Hab. Nilgiri plateau. *Exp.* 34 millim.

1977. **Bryophila muscosa**, *Hmpsn. Ill. Het.* viii. p. 72, pl. 144, fig. 15.

♀. Differs from *nilgiria* in the vertex of head being black; the thorax and fore wing slightly suffused with olive-green; the subbasal and antemedial lines replaced by ill-defined black patches; orbicular and reniform prominent, the latter with black centre; claviform a prominent black-ringed white spot; the postmedial line obsolescent; a prominent diffused and broken submarginal band; cilia less prominently chequered, those of hind wing fuscous. Underside of both wings black with irregular patches of white.

Hab. Nilgiri lower slopes. *Exp.* 38 millim.

1978. **Bryophila postochrea**, *Hmpsn. Ill. Het.* ix, p. 95, pl. 161, fig. 8.

♀. Head white; palpi black at sides; thorax white, with black markings; abdomen ochreous fuscous. Fore wing white, with some black markings at base; a black band from costa to median nervure; a waved antemedial line; orbicular and reniform white with black outline, the latter formed like the letter E; a very broad blackish postmedial band extending on inner margin to the antemedial line; a double lunulate submarginal line; a prominent black mark above outer angle and less prominent marks towards apex. Hind wing ochreous suffused with fuscous; a blackish postmedial line and broad marginal band; cilia white. Underside grey suffused with fuscous; fore wing with medial black spot on costa and postmedial line; hind wing with cell-spot and postmedial line.

Hab. Trincomali, Ceylon. *Exp.* 28 millim.

1979. **Bryophila nadgani**, *Hmpsn. Ill. Het.* viii, p. 87, pl. 146, fig. 6.

Red-brown; abdomen with the dorsal tufts black. Fore wing

with oblique black subbasal and antemedial lines, the area between the base and the latter shaded with fuscous; the orbicular and reniform large and indistinct, the latter with dark centre to lower part; a dark patch on costa above them; a waved postmedial line highly excurved beyond cell, the area beyond it suffused with fuscous; an indistinct lunulate submarginal line with pale patches on it, a lunulate marginal line. Hind wing fuscous brown. Underside of fore wing fuscous, the costal and outer margins greyish, with medial and postmedial marks on costa. Hind wing greyish, with cell-spot and lunulate postmedial and marginal line.

The form from the N.W. Himalayas is rather darker: one specimen has a white patch below the stigmata of fore wing.

Hab. N.W. Himalayas; Nilgiris, western slopes. *Exp.* 22–28 millim.

*1980. **Bryophila ? albistigma**, *Moore, P. Z. S.* 1867, p. 45; *C. & S.* no. 1774.

Grey-green. Fore wing with traces of pale-edged undulating lines; the medial area darker, with the orbicular represented by a white speck, the reniform by two; a white patch beyond the cell; submarginal and marginal series of white spots, the last centred by dark specks. Hind wing pale pinkish brown, with sinuous postmedial line and diffused submarginal band.

Hab. "Bengal." *Exp.* 30 millim.

1981. **Bryophila khasiana**, n. sp.

Differs from *nadgani* in being paler and more ochreous brown; the anal tuft ochreous. Fore wing more variegated with olive and dark brown shades, with the antemedial waved line more erect; a dark patch below the stigmata; the postmedial line less excurved and indistinct, with some white beyond it near inner margin; outer margin with a black speck above outer angle. Hind wing paler fuscous.

Hab. Khásis (*Elwes*). *Exp.* 34 millim. Type in coll. Elwes.

1982. **Bryophila albipuncta**, n. sp.

♀. Head and thorax pale red-brown; abdomen darker. Fore wing dark red-brown, suffused with paler red, especially on basal and medial costal areas; the transverse lines obscure; the antemedial erect and sinuous; the orbicular and reniform rufous and indistinct; claviform black; a series of minute white specks on the veins beyond the postmedial line, most prominent towards inner margin. Hind wing fuscous; underside with large black cell-spot and highly irregularly sinuous postmedial line.

Hab. Sikhim (*Möller*). *Exp.* 28 millim. Type in coll. Elwes.

1983. **Bryophila pallidisca**, *Moore, P. Z. S.* 1881, p. 372, pl. 37, fig. 14; *C. & S.* no. 1802.
Erastria albiorbis, *Moore, Lep. Atk.* p. 141; *C. & S.* no. 1795.
Erastria fusca, *Moore, Lep. Atk.* p. 141; *C. & S.* no. 1797.
Erastria nubila, *Moore, Lep. Atk.* p. 142; *C. & S.* no. 1801.

Red-brown. Fore wing with subbasal, antemedial, postmedial, and submarginal irregularly waved, dark lines, with fuscous suffusion before the antemedial and beyond the postmedial line; orbicular and reniform large. Hind wing white, with slight fuscous suffusion on outer margin.

The typical form has large white patches on orbicular and lower part of reniform.

Hab. Sikhim. *Exp.* 30 millim.

1984. **Bryophila glaucescens**, *Butl. Ill. Het.* vii, p. 81, pl. 133, fig. 4.
Anophia undara, *Swinh. Trans. Ent. Soc.* 1890, p. 234.

Dark purple-grey variegated with black. Fore wing with double subbasal, antemedial, and postmedial waved black lines; the medial area dark, with a small orbicular spot and large reniform with orange spot on it; an irregularly dentate submarginal line and marginal crenulate line. Hind wing dark fuscous.

Hab. Dharmsála; Rangoon. *Exp.* 24 millim.

1985. **Bryophila glaucostigma**, n. sp.

♂. Palpi black at sides; head and thorax reddish brown; abdomen fuscous. Fore wing fuscous brown; the subbasal waved line with a pale and dark patch beyond it below median nervure; the antemedial line approaching the postmedial below the cell; the orbicular and reniform pale; the submarginal line pale, with irregular dark dashes before it; a series of marginal black specks; cilia intersected by pale streaks. Hind wing pale, suffused with fuscous towards outer margin. Underside pale; both wings with crenulate postmedial line; hind wing with cell-spot.

Hab. E. Pegu, 5000 feet (*Doherty*). *Exp.* 34 millim. Type in coll. Elwes.

Genus **ERASTRIA**.

Erastria, *Ochs. Eur. Schmett.* iv, p. 92 (1816).
Motama, *Moore, Lep. Atk.* p. 110 (1882).

Type, *E. fasciana*, Linn., from Europe.

Range. Nearctic and Palæarctic regions; China; Himalayas; Assam Hills; Ceylon; Java.

Palpi upturned, reaching above vertex of head, the 2nd joint clothed with long hair below, the 3rd prominent; antennæ minutely ciliated in male; thorax roughly scaled but without tufts; abdomen with strong dorsal tufts, and shorter than the hind wing.

Fore wing with the areole long and narrow. Hind wing with veins 3 and 4 from cell. Legs naked.
Larvæ with four pairs of abdominal prolegs.

1986. **Erastria stygia,** *Butl. Ill. Het.* iii, p. 20, pl. 46, fig. 2.

Black-brown; head, thorax, and fore wing irrorated with grey scales; the last with indistinct subbasal and antemedial waved lines; the orbicular barely traceable; the reniform more prominent and with white outline; the postmedial curved and waved line indistinct from the costa to vein 2, thence white and prominent to inner margin; the submarginal irregularly waved line indistinct and with white scales on it in places; a marginal series of black spots slightly defined by white; cilia with white streaks on them below apex. Hind wing pale fuscous; the cilia whitish at tips; underside with cell-spot and waved postmedial line.
Hab. Japan; Nágas; Ceylon. *Exp.* 22–28 millim.

1987. **Erastria larentiformis.**
Erastria cidarioides, *Moore, Lep. Atk.* p. 142; *C. & S.* no. 1796 (præocc.).

Differs from *stygia* in being browner; the orbicular more prominent; the reniform with dark outline; the postmedial line more irregularly excurved and ochreous from the costa to vein 7,

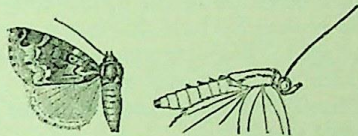



Fig. 163.—*Erastria larentiformis*, ♂. 1/1.

thence white to inner margin; the whole of the outer area white except the apical area; a black subapical mark and a spot on centre of outer area.
Hab. Sikhim. *Exp.* 28 millim.

1988. **Erastria aurata,** *Moore, Lep. Atk.* p. 110, pl. 4, fig. 10; *C. & S.* no. 2064.

Head, thorax, and abdomen clothed with pale red-brown and fuscous scales. Fore wing golden green, with waved subbasal, antemedial, indistinct medial, and postmedial lines; the orbicular and reniform with whitish outlines and a black patch between them extending upwards to the costa; a grey patch on inner margin between the antemedial and medial lines; some dark suffusion on apical part of outer area; an irregularly sinuous submarginal line; a marginal series of white specks. Hind wing pale; the inner

and outer areas suffused with fuscous; underside with speck at end of cell and dentate postmedial line; cilia of both wings pinkish.
Hab. Sikhim. *Exp.* 30 millim.

*1989. **Erastria cidarioides**, *Moore, Lep. Atk.* p. 110, pl. 4, fig. 9; *C. & S.* no. 2065.

Differs from *larentiformis* in the basal area of the fore wing being golden yellow to beyond the antemedial line; the reniform and ground-colour of outer area golden yellow.
Hab. Sikhim. *Exp.* 28 millim.

*1990. **Erastria ? decorata**, *Moore, Lep. Atk.* p. 110, pl. 4, fig. 11; *C. & S.* no. 2066.

♂. Golden brown; thorax irrorated with grey; palpi and legs blackish with pale bands. Fore wing with grey specks on the costa and veins; the orbicular, reniform, and a postmedial band golden yellow, the last with sinuous dark outer edge; a yellowish submarginal line; a blackish patch in cell between the stigmata. Abdomen and hind wing dark fuscous.
Hab. Sikhim. *Exp.* 32 millim.

1991. **Erastria glaucopis**, n. sp.

Head and collar pale reddish; thorax and abdomen grey. Fore wing with the basal area reddish; the medial area fuscous, defined by waved ante- and postmedial lines, the latter excurved round the large grey reniform spot; the outer area grey, with a rufous patch on apical part of costa and black spot at centre of margin. Hind wing fuscous; underside with cell-spot, crenulate postmedial line, and marginal series of specks.
Hab. Sikhim (*Möller*). *Exp.* 24 millim. Type in coll. Elwes.

*1992. **Erastria ? marginata**, *Moore, P. Z. S.* 1881, p. 372, pl. 37, fig. 21; *C. & S.* no. 1800.

Head and thorax pale ferruginous; abdomen pale fuscous. Fore wing greyish ferruginous, with a pale ferruginous band on inner margin joined by a submarginal band from below the apex with some whitish beyond it; the orbicular and reniform spots pale fuscous.
Hab. Sikhim. *Exp.* 32 millim.

1993. **Erastria melanostigma**, n. sp.

♂. Head and thorax yellowish white suffused with rufous; abdomen pale fuscous, the dorsal tufts black. Fore wing whitish; a rufous patch on inner area before the middle; a large quadrate black patch occupying the inner medial area; the orbicular and reniform represented by black specks with silvery-grey scales round

them, and with a rufous patch between them; a postmedial irregularly waved white line, the area between it and the indistinct irregular submarginal line fuscous on costal two-thirds, rufous towards inner margin. Hind wing fuscous; underside with cell-spot and postmedial line.

Hab. Khásis (*Elwes*); Java. *Exp.* 22 millim. Type in B.M.

Genus **ERASTROIDES.**

Erastroides, *Hmpsn. Ill. Het.* ix, p. 98 (1893).

Type, *E. oliviaria*, Hmpsn.

Range. Ganjam; Nilgiris; Ceylon.

Differs from *Erastria* in the fore wing having veins 7, 8, 9, 10 stalked, there being no areole.

1994. **Erastroides curvifascia**, *Hmpsn. Ill. Het.* viii, p. 76, pl. 145, fig. 23.

♂. Dull fuscous brown. Fore wing with indistinct, double subbasal and antemedial waved lines; reniform with white and black outline; the postmedial double line regular, excurved from the subcostal to vein 2 and with a large white patch on and beyond it at inner margin; a very indistinct irregularly waved submarginal line. Hind wing dark fuscous. Underside ochreous, irrorated with black; a cell-spot and indistinct waved postmedial line.

Hab. Ganjam, Nilgiris. *Exp.* 24 millim.

1995. **Erastroides oliviaria**, *Hmpsn. Ill. Het.* ix, p. 99, pl. 162, fig. 23

♂. Head, thorax, and abdomen olive-green. Fore wing whitish, much suffused with olive-green; indistinct double waved subbasal and antemedial lines; a dark patch between the almost obsolete orbicular and reniform stigmata; a slightly waved and much

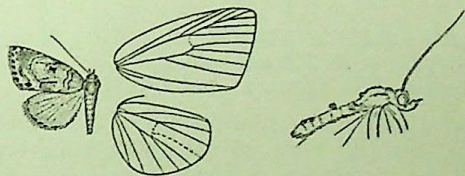



Fig. 164.—*Erastroides oliviaria*, ♂. 1/1.

excurved postmedial line, with a black spot beyond it near inner margin; a white patch on outer margin below apex; a marginal series of specks. Hind wing pale fuscous, with a marginal lunulate line. Underside with black cell-spot and indistinct waved postmedial line.

Hab. Ceylon. *Exp.* 22 millim.

Genus HYELOPSIS, nov.

Type, *H. vialis*, Moore.

Range. Japan; China; throughout India, Ceylon, and Burma; Penang; Australia.

Differs from *Erastria* in the fore wing being narrower; the hind wing with veins 3 and 4 stalked.

SECT. I. Antennæ of male minutely ciliated.

1996. **Hyelopsis vialis**, *Moore, Lep. Atk.* p. 135; *C. & S.* no. 1851.

♂. Head, thorax, and abdomen ochreous white, the last with two dorsal black tufts. Fore wing with the basal and costal areas ochreous white, with a slight fuscous tinge; the outer area, which extends from the apex to centre of inner margin, dark purplish fuscous and crossed by the irregularly-waved whitish postmedial line, which becomes pure white towards inner margin; a diffused dark somewhat dentate submarginal line; a marginal series of short dark strigæ. Hind wing pale fuscous. Underside: fore wing fuscous, the costal and outer areas pinkish ochreous; hind wing pinkish ochreous, with cell-spot and curved postmedial line.

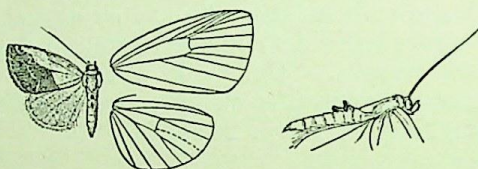



Fig. 165.—*Hyelopsis vialis*, ♂. 1/1.

♀. Slightly more suffused with fuscous. Fore wing with the outer area pinkish fuscous in tone; two prominent white lunules on the postmedial line above inner margin. Hind wing dark fuscous; the outer margin and cilia ochreous.

Hab. Dharmsála; Sikhim; Nilgiris. *Exp*., ♂ 20, ♀ 22 millim.

1997. **Hyelopsis signifera**, *Wlk. Cat.* xii, p. 793; *Moore, Lep. Ceyl.* iii, pl. 150, fig. 4; *C. & S.* no. 1865.
Acontia subfixa, *Wlk. Cat.* xxxv, p. 1964.

Head, thorax, and abdomen white tinged with brown. Fore wing with the basal half white, irrorated with a few brown scales, some brown costal marks and a black subbasal speck; the outer half brown; the reniform white, with two black specks on it and a black spot beyond it; postmedial white patches on the costal and inner areas, traversed by the postmedial line, which is excurved round end of cell; outer area with the veins and marginal line rufous; an indistinct waved submarginal white line with some black streaks before it. Hind wing white tinged with fuscous. Underside with cell-spot and waved postmedial line.

Hab. Japan; China; throughout India, Ceylon, and Burma; Andamans; Penang; Australia. *Exp*. 18 millim.

1998. **Hyelopsis renalis**, *Moore, Lep. Atk.* p. 142; *C. & S.* no. 1859.

Head, thorax, and abdomen whitish, slightly suffused with reddish ochreous. Fore wing yellowish brown; the basal area whitish, with indistinct black streaks on it, and bounded by an oblique white and black line; the reniform fuscous, with a white outline in the form of a figure of 8; a white and black postmedial line angled below the costa and incurved towards inner margin; the area beyond it whitish, with the veins from end of cell streaked with black and with diffused black dashes in the interspaces. Hind wing pale fuscous; cilia with a dark line through them. Claspers very large in male.

Hab. Dharmsála; Calcutta; Ceylon; Tenasserim. *Exp.* 20 millim.

1999. **Hyelopsis lativitta**, *Moore, P. Z. S.* 1881, p. 373; *id. Lep. Ceyl.* iii, pl. 150, fig. 9; *C. & S.* no. 1907.
Bankia basalis, *Moore, Lep. Atk.* p. 143; *C. & S.* no. 1855.

Differs from *renalis* in the area beyond the postmedial line of fore wing being without the black streaks, and not whitish, except towards inner margin; a pale waved submarginal line.

Hab. Shanghai; Sikhim; Nilgiris; Ceylon; Borneo. *Exp.* 20 millim.

2000. **Hyelopsis picata**, *Butl. Ill. Het.* vii, p. 62, pl. 129, fig. 2.

Head and thorax white; abdomen ochreous. Fore wing with the basal half white; a black subbasal speck, with a brown mark on the costa above it; outer area yellowish brown, with a slightly dentate black line on its inner edge; a white patch from the costa, including the two black specks which represent the reniform; a postmedial black line excurved beyond the cell; outer margin with a white mark below apex, then some black marks, and a large triangular white patch at outer angle. Hind wing pale or dark fuscous.

Hab. Simla; Dharmsála. *Exp.* 22 millim.

2001. **Hyelopsis bætica**, *Swinh. Trans. Ent. Soc.* 1890, p. 224.

♂. Head, thorax, and abdomen ochreous, suffused with fuscous. Fore wing brownish ochreous; a subbasal dark patch on the costa; irregularly undulating oblique ante- and postmedial white and black lines, the costal area between them fuscous; the reniform whitish; outer area purplish fuscous. Hind wing fuscous.

Hab. Rangoon. *Exp.* 12 millim.

SECT. II. Antennæ of male with long cilia.

2002. **Hyelopsis plumbata**, *Butl. Ill. Het.* vii, p. 61, pl. 129, fig. 4.
Marimatha freda, *Swinh. Trans. Ent. Soc.* 1891, p. 147.

Head, thorax, and abdomen olive-yellow. Fore wing olive-yellow; a fuscous patch on the base of costa; an obsolescent

antemedial curved double line filled in with purplish, and with a black spot below median nervure; a slightly waved postmedial double line filled in with purple and excurved beyond cell, where it is met by a dark streak from the apex; the outer margin grey. Hind wing pale fuscous. Underside with prominent cell-spot and waved postmedial line.

Hab. N.W. Himalayas; Nilgiris. *Exp.* 24 millim.

2003. **Hyelopsis frausa,** *Swinh. P. Z. S.* 1886, p. 446; *C. & S.* no. 1874.
Naranga pallida, *Hmpsn. Ill. Het.* ix, p. 96, pl. 162, fig. 13.

♂. Differs from *plumbata* in being pale brownish ochreous. Fore wing with white and dark marks on inner margin and costa representing the antemedial line; a few dark scales at end of cell; the postmedial curved and waved double line almost obsolete and represented by white and dark lines between vein 2 and inner margin; the outer area and cilia pale. Hind wing pale fuscous.

The form *pallida* from Ceylon is pale ochreous, with the markings of fore wing still more reduced; the hind wing white.

Hab. Mhow; Ceylon. *Exp.* 18 millim.

2004. **Hyelopsis umbrina,** *Hmpsn. Ill. Het.* viii, p. 74, pl. 145, fig. 15.

♀. Head and thorax reddish brown; abdomen fuscous. Fore wing red-brown; traces of a curved antemedial double line filled in with pale colour and very much excurved beyond the cell, where it is produced almost to an angle and met by an oblique dark streak from the apex. Hind wing fuscous.

Hab. Nilgiris, W. slopes. *Exp.* 24 millim.

SECT. III. Antennæ of male bipectinate, of female with long cilia; fore wing rather narrower, the outer margin oblique.

2005. **Hyelopsis herbaria,** *Swinh. P. Z. S.* 1886, p. 446; *C. & S.* no. 1819.

Ochreous white. Fore wing with some fuscous black spots on the costa; a large blotch below end of cell; traces of a postmedial series of specks; some obliquely disposed dark scales from apex; outer area slightly suffused with rufous; outer margin with a few black scales; cilia with a blackish patch at centre.

The types are in very bad condition, but the abdomen appears to have been tufted.

Hab. Mhow. *Exp.* 18 millim.

Genus TOXOPHLEPS.

Toxophleps, *Hmpsn. Ill. Het.* ix, p. 124 (1893).

Type, *T. optiva*, Swinh.

Range. N.W. Himalayas; Ceylon; Rangoon.

Palpi upturned, the 2nd joint reaching vertex of head and

roughly scaled, the 3rd short; antennæ minutely ciliated in male; thorax smoothly scaled; abdomen with dorsal tufts on the proximal segments; tibiæ naked. Fore wing with the apex nearly rectangular; veins 7, 8, 9 stalked. Hind wing with veins 6, 7 stalked.

SECT. I. Fore wing of male with the subcostal nervure very much bowed; vein 10 absent; 7, 8, 9 displaced.

2006. **Toxophleps optiva**, *Swinh. Trans. Ent. Soc.* 1890, p. 224; *Hmpsn. Ill. Het.* ix, pl. 167, fig. 26.

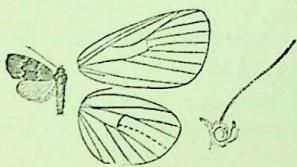



Fig. 166.
Toxophleps optiva, ♂. 1/1.

Dark greyish fuscous. Fore wing with waved ante- and postmedial narrow erect orange bands, with black edges. Hind wing pale.

Hab. Ceylon; Rangoon. *Exp.* 16 millim.

SECT. II. Fore wing with the subcostal nervure and veins 7, 8, 9 not distorted in either sex; vein 10 present.

2007. **Toxophleps trilatalis**, *Wlk. Cat.* xxxiv, p. 1237; *C. & S.* no. 4469.

Differs from *optiva* in the bands of the fore wing being fiery orange and the base suffused with orange as far as the antemedial band.

Hab. Simla; Dharmsála. *Exp.* 16 millim.

Genus HYELA.

Hyela, *Steph. Cat. Lep. Brit. B. M.* p. 149 (1850).
Bankia, *Guen. Noct.* ii, p. 231 (1852).

Type, *H. uncula*, Clerck, from Europe.
Range. Europe and throughout India; Burma.
Differs from *Hyelopsis* in being without the dorsal tufts to abdomen.

2008. **Hyela obliqua**, *Moore, Lep. Atk.* p. 143; *C. & S.* no. 1857.

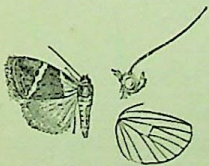



Fig. 167.
Hyela obliqua, ♂. 1/1.

Head and abdomen ochreous, irrorated with black scales; thorax white, banded with dark cupreous brown. Fore wing with the basal area white, irrorated with dark and pink scales; its outer edge oblique, the rest of the wing dark cupreous brown, with an oblique white band from the costa just beyond the middle to outer angle; the costa ochreous. Hind wing dark fuscous.

The Burmese form has a brown patch on the base of costa of

fore wing; the oblique band less regular and traces of postmedial and submarginal lines.

Hab. Simla; Kashmir; Dharmsála; Bernardmyo. *Exp.* 22 millim.

2009. **Hyela erecta,** *Moore, P. Z. S.* 1881, p. 373; *C. & S.* no. 1856.

Yellowish white; the palpi rufous. Fore wing with a broad medial golden-brown erect band, with black edges; a black speck at lower angle of cell; the indistinct postmedial white line highly excurved round end of cell, then joining the medial band; the apical costal area and outer margin rufous. Hind wing pale fuscous. Underside rufous; hind wing with cell-spot and curved postmedial line.

Hab. Nilgiris. *Exp.* 26 millim.

2010. **Hyela ruptifascia,** *Hmpsn. Ill. Het.* viii, p. 75, pl. 145, fig. 12.

♂. Head, thorax, and abdomen white; palpi rufous. Fore wing white; a broad medial slightly oblique black band; a black speck at lower angle of cell; a subtriangular black patch on the costa before apex; a black spot on centre of outer margin; cilia black towards outer angle. Hind wing pale fuscous. Underside with cell-spot and postmedial line.

Hab. Nilgiris. *Exp.* 21 millim.

2011. **Hyela quadripartita,** *Wlk. Cat.* xxxiii, p. 786; *C. & S.* no. 1846.

Differs from *ruptifascia* in the head and thorax being marked with black. Fore wing with the medial band rather broader; a triangular black patch on outer margin from apex to outer angle.

Hab. N.W. Himalayas; W. India; Nilgiris. *Exp.* 18 millim.

2012. **Hyela tegulata,** *Butl. Ill. Het.* vii, p. 63, pl. 129, fig. 1.

Differs from *ruptifascia* in having the medial black band of fore wing broadening towards inner margin and conjoined to a large triangular patch on the outer margin from apex to near outer angle, which is crossed by a highly excurved postmedial line. Hind wing ochreous white, more or less suffused with fuscous.

Hab. Dharmsála; Nilgiris. *Exp.* 20–22 millim.

2013. **Hyela nigrivittata,** *Warr. P. Z. S.* 1888, p. 301.

Ochreous white; the palpi black. Fore wing with a broad black band, with white edges occupying the centre of the wing; its inner edge waved, its outer irregular and angled at vein 3; a black speck on outer margin above outer angle. Hind wing with an indistinct medial line.

Hab. Campbellpur. *Exp.*, ♂ 22, ♀ 26 millim.

Genus MICARDIA.

Micardia, *Butl. A. M. N. H.* (5) i, p. 81 (1878).

Type, *M. argentata*, Butl., from Japan.
Range. Japan; Sikhim.

Palpi upturned, reaching vertex of head, and smoothly scaled; antennæ minutely ciliated in male. Thorax and abdomen without tufts. Fore wing somewhat acute at apex, the outer margin oblique; vein 8 anastomosing with 9 to form the areole. Hind wing with veins 3 and 4 stalked.

2014. **Micardia pulcherrima**, *Moore, P. Z. S.* 1867, p. 48, pl. vi, fig. 7; *C. & S.* no. 1689.

♂. Head, thorax, and abdomen ochreous. Fore wing ochreous, the costal and inner areas suffused with pink, the medial area with fuscous as far as the oblique streak; a black antemedial speck above vein 1; a very prominent silvery-white streak on median nervure; the oblique streak from apex prominent and edged with white; a similar streak from centre of outer margin; some pink and white on vein 2. Hind wing pale, with a faint cell-spot and oblique postmedial line; some black on inner margin towards anal angle.

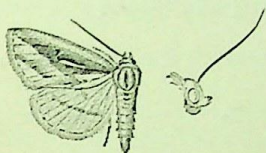



Fig. 168.
Micardia pulcherrima, ♂. 1/1.

Hab. Sikhim. *Exp.* 33 millim.

Genus MEGALODES.

Megalodes, *Guen. Noct.* ii, p. 261 (1852).

Type, *M. eximia*, Herr.-Schäff., from Asia Minor.
Range. Asia Minor; Kashmir; Indian Peninsula.

Palpi obliquely upturned; frons with a trilobate corneous process; antennæ simple; thorax and abdomen without tufts. Fore wing with the cilia not crenulate; vein 8 given off from 7 and anastomosing with 9 to form the areole.

2015. **Megalodes kashmirensis**, n. sp.

♂. Head, thorax, and abdomen yellowish white. Fore wing yellowish grey; a narrow curved antemedial white band; the orbicular and reniform indistinct; an oblique nearly straight postmedial and curved narrow submarginal white band; an indistinct marginal crenulate white line. Hind wing fuscous, the cilia whitish.

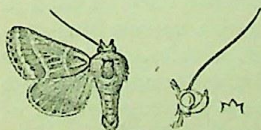



Fig. 169.—*Megalodes kashmirensis*, ♂. 1/1.

Hab. Gulmurg, Kashmir (*Johnstone*). *Exp.* 28 millim. Type in coll. Elwes.

2016. **Megalodes denticulosa,** *Wlk. Cat.* xxxii, p. 676; *C. & S.* no. 2135.

Cupreous red-brown; thorax and fore wing irrorated with white scales, the latter with indistinct waved antemedial and highly excurved postmedial line; traces of the reniform stigma; highly dentate submarginal and fine marginal lines white; abdomen and hind wing paler; cilia of both wings grey.

Hab. Poona; Bombay; Coimbatore. *Exp.* 26 millim.

Genus **TARACHE.**

Tarache, *Hübn. Verz.* p. 261 (1818).
Euphasia, *Steph. Ill. Brit. Ent., Haust.* iii, p. 115 (1829).
Agrophila, *Guen. Ann. Soc. Ent. Fr.* x, p. 228 (1840).

Type, *T. lucida*, Hüfn.

Range. Universally distributed in the tropical, subtropical, and warmer temperate zones.

Differs from *Hyela* in the palpi being porrect, the frons with a rounded corneous projection.

Larva with four pairs of abdominal prolegs.

SECT. I. (*Tarache*). Hind wing with veins 3 and 4 from the cell.

A. *Palpi with the 3rd joint short and not reaching beyond the frons.*

2017. **Tarache lucida,** *Hüfn. Berl. Mag.* iii, 302 (1767).
Noctua solaris, *Schiff. Wien. Verz.* p. 90.
Noctua albicollis, *Fabr. Spec. Ins.* ii, p. 218.
Noctua rupicola, *Borkh. Schmett. Eur.* iv, p. 82.
Noctua titania, *Freyer, Beitr. Schmett.* vi, pl. 533.
Noctua insolatrix, *Hübn. Samml. eur. Schmett., Noct.* figs. 684, 685.
Acontia triradiata, *Wlk. Cat.* xii, p. 794; *C. & S.* no. 1849.

♂. Dark brown; head and thorax more or less intermingled with white scales; abdomen white-ringed. Fore wing with the basal half white, running out to an angle at lower end of cell; the basal area with ill-defined waved blue-grey lines and with a black speck near base; the outer area dark brown, with a large quadrate postmedial costal white patch from which arises a dark waved and incurved line; reniform figure-of-8-shaped, with narrow blue-grey outline; a waved submarginal white line, obsolescent towards costa and sending spurs to outer margin near outer angle, the area beyond it irrorated with blue-grey scales; a marginal series of black specks; cilia white towards outer angle. Hind wing dark brown, with a very irregular white medial band sending spurs inwards towards the base; cilia white. Underside with the brown and white areas of both wings disposed much as on upperside.

♀. The white markings of both wings less extensive.

The variety *albicollis* has the head, thorax, and abdomen almost pure white; the whole basal area of fore wing pure white; the hind wing white, with broad marginal band; the female like the male of the typical form.

Hab. Europe; N.W. Himalayas; Campbellpur. *Exp.* 30 millim.

2018. **Tarache hortensis,** *Swinh. P. Z. S.* 1884, p. 517, pl. 47, fig. 7; *C. & S.* no. 1836.

♀. Differs from the typical form of *lucida* in the fore wing having the reniform obsolete; no grey-blue scales beyond the submarginal line; the cilia not white towards outer angle. Hind wing uniform fuscous, the outer area slightly darkest. Underside nearly uniform fuscous.

Hab. Karáchi. *Exp.* 24 millim.

2019. **Tarache upsilon,** *Wlk. Cat.* xxxiii, p. 763; *C. & S.* no. 1824.

♀. Differs from *lucida* in the costal portion of the medial band of fore wing being obsolete, and replaced by two short fuscous bands from the costa on each side of the large hoop-shaped reniform spot with black outline; the submarginal line ill-defined and with black lunules before it. Hind wing uniform dark fuscous. Underside nearly uniform pale fuscous.

Hab. Poona. *Exp.* 30 millim.

2020. **Tarache opalinoides,** *Guen. Noct.* ii, p. 219; *C. & S.* no. 1844.
Calophasia postica, *Wlk. Cat.* xxxiii, p. 764; *C. & S.* no. 1864.

Differs from the white form of *lucida* in the dark patches of the fore wing being restricted to a large patch on the outer half of inner margin and to some marks on each side of the costal portion of the submarginal line; the reniform an incomplete and indistinct black hoop. Hind wing white, with fuscous marginal band. Underside of fore wing fuscous; hind wing white.

Hab. Campbellpur; Poona; Nilgiris; Ceylon. *Exp.* 30 millim.

2021. **Tarache notabilis,** *Wlk. Cat.* xi, p. 669; *C. & S.* no. 1823.

Pure white. Fore wing with a short subbasal black line from the costa and an antemedial costal spot, each having a dark speck below it; a postmedial costal spot; a broad irregular dark leaden band from the apex to inner margin beyond middle, and traversed by the lunulate black postmedial line; a series of submarginal black lunules which are all obscured by white suffusion, except two at the apex and one at outer angle, which last has a rufous lunule inside it: cilia white, fuscous towards apex and outer angle. Hind wing narrow, with marginal fuscous band, broad at apex; the cilia white.

Hab. Simla; Punjab; Calcutta. *Exp.* 30-38 millim.

2022. **Tarache catena**, *Sowerby, Brit. Misc.* p. 29, pl. 14; *C. & S.* no. 1825.
Desmophora elegans, *Steph. Cat. Brit. Ins.* no. 6398.

Pure white. Fore wing with a large oblique basal leaden patch on the costa tinged with olive-yellow; a medial dome-shaped patch; a broad band with curved inner edge extending from the apex to centre of inner margin, and with a double postmedial series of indistinct lunules on it; a submarginal series of blue-grey spots, the spot above outer angle almost black; cilia grey. Hind wing nacreous, with a marginal fuscous band, broad at apex; the cilia white.

Hab. Abyssinia; Natal; Sind; Bombay; Coimbatore. *Exp.* 40 millim.

2023. **Tarache catenula**, *Wlk. Cat.* xxxiii, p. 780; *C. & S.* no. 1826.

Head, thorax, and fore wing violaceous grey-brown, with a golden tinge; the last with some white below base of median nervure; a broad oblique white band from costa to lower angle of cell; a large quadrate white patch on the costa before apex, from which arises an incurved postmedial black line obsolescent towards inner margin; a submarginal series of blue-grey spots on a white ground and marginal series of short black strigæ. Hind wing fuscous, the base and disk slightly nacreous; the cilia white.

Hab. Campbellpur; Karáchi; Coimbatore. *Exp.* 32 millim.

B. *Palpi with the 3rd joint longer and extending beyond the frons.*

2024. **Tarache albonotata**, *Hmpsn. Ill. Het.* ix, p. 96, pl. 162, fig. 22.

♀. Head, thorax, and abdomen fuscous brown; tegulæ pure white. Fore wing fuscous brown, with traces of numerous paler waved lines; a large white patch from the base to middle of cell, not extending to costa or inner margin; a large white patch on outer costal area leaving a triangular postmedial dark patch on the costa. Hind wing white, slightly suffused with fuscous.

Hab. Ceylon. *Exp.* 22 millim.

2025. **Tarache swinhoei**, *Butl. P. Z. S.* 1883, p. 162; *C. & S.* no. 1752.

♀. Head and thorax vinous brown; abdomen fuscous, the segments fringed with rufous. Fore wing vinous brown, suffused with fuscous and with indistinct diffused medial and marginal blackish bands. Hind wing yellow, with broad black marginal band; cilia rufous. Underside yellow suffused with fuscous, especially on fore wing; both wings with indistinct medial, postmedial, and submarginal waved lines.

Hab. Assirghur; Poona. *Exp.* 28 millim.

SECT. II. (*Agrophila*). Hind wing with veins 3 and 4 stalked.

2026. **Tarache karachiensis,** *Swinh. P. Z. S.* 1889, p. 410.

♂. Head and collar white; thorax tinged with fuscous, abdomen with ochreous. Fore wing white, with a rufous patch from lower end of cell to inner margin; the area between the apex, this rufous mark, and the outer margin fuscous, irrorated with white scales, with white marks towards outer angle, and with three black specks on its upper edge; a fuscous spot on the costa before apex; a marginal series of black specks; cilia with patches of white below apex and at middle. Hind wing white, the margin suffused with fuscous. Underside white, the fore wing tinged with ochreous.

♀. The whole fore wing fuscous, except a diffused white subcostal fascia; the patch below the end of the cell and the outer area tinged with ochreous; an indistinct postmedial line. Hind wing pale fuscous.

Hab. Karáchi. *Exp.*, ♂ 22, ♀ 24 millim.

2027. **Tarache olivea,** *Guen. Noct.* ii, p. 217; *C. & S.* no. 1863.
Tarache nivosa, *Swinh. P. Z. S.* 1886, p. 446, pl. 41, fig. 14; *C. & S.* no. 1862.

Head and thorax white; metathorax blackish; abdomen ochreous white. Fore wing white, the inner and outer areas almost wholly fuscous; a subbasal grey spot; an antemedial curved olive-yellow line; the orbicular and reniform small grey ring-spots; traces of two olive-yellow waved lines crossing the inner dark patch: the outer area suffused with olive-yellow in irregular patches. Hind wing very pale fuscous, the outer area slightly darker.

♀ with the dark areas of the fore wing browner and more extensive; the hind wing dark fuscous.

Hab. Simla; Dharmsála; Mhow. *Exp.*, ♂ 20, ♀ 22 millim.

2028. **Tarache olivacea,** *Hmpsn. Ill. Het.* viii, p. 63, pl. 142, fig. 9.

Head and thorax white; abdomen pale fuscous. Fore wing white; the costa slightly fuscous, with white strigæ towards the apex; the outer half of inner area olive-green, suffused with purple scales and crossed by an indistinct waved postmedial pale line; a fuscous lunule on discocellulars; a lunulate white marginal line. Hind wing fuscous.

Hab. Shanghai; Nágas; Nilgiris. *Exp.* 24 millim.

2029. **Tarache binominata,** *Butl. Entom.* 1892, p. 64.
Acontia costalis, *Wlk. Cat.* xxxiii, p. 784 (præocc.); *C. & S.* no. 1830.

♂. Head white; thorax dark fuscous brown; abdomen ochreous fuscous. Fore wing black-brown, with a broad pure white costal fascia not reaching the apex, and widest at middle and extremity. Hind wing pale fuscous, the outer area darkest. Underside of fore wing ochreous fuscous, with ochreous costal stripe; the hind wing whitish.

Hab. Campbellpur; Karáchi; Poona; Coimbatore. *Exp.* 20 millim.

2030. **Tarache tropica**, *Guen. Noct.* ii, p. 217; *Moore, Lep. Ceyl.* iii, pl. 150, fig. 2; *C. & S.* no. 1866.
Acontia bipunctata, *Wlk. Cat.* xii, p. 798.
Acontia maculosa, *Wlk. Cat.* xii, p. 795; *C. & S.* no. 1840.

♂. Yellowish white. Fore wing with four yellow strigæ on the costa before the middle; a yellow antemedial patch from median nervure to inner margin; the orbicular and reniform small indistinct grey ring-spots; a broad diffused submarginal dark yellowish band with some purplish scales on it, and crossed by the postmedial yellow line, which is highly excurved beyond the cell; a submarginal irregularly waved yellow line; two black specks on the margin below apex, the cilia at that point being blackish, and one black speck above outer angle. Hind wing whitish, with fuscous marginal band.

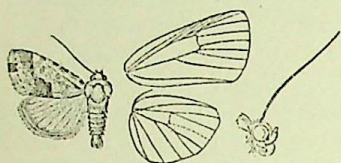



Fig. 170.—*Tarache tropica*, ♂. ½.

♀ with the ground-colour pure white; the abdomen fuscous, with white rings. Fore wing with the markings much browner.

Hab. China; Formosa; throughout India and Ceylon; Andamans; Java. *Exp.* 23 millim.

2031. **Tarache basifera**, *Wlk. Cat.* xii, p. 793; *C. & S.* no. 1829.

♀. Differs from *tropica* in the whole of the inner area of fore wing being purplish fuscous, narrowly so at base, broadly from middle of cell to outer margin; the thorax dark.

Hab. Karáchi; Poona; Coimbatore. *Exp.* 22 millim.

2032. **Tarache imbuta**, *Wlk. Cat.* xxxiii, p. 794; *C. & S.* no. 1799.
Acontia acerba, *Feld. Reis. Nov.* pl. 108, fig. 25; *C. & S.* no. 1827.
Acontia inda, *Feld. Reis. Nov.* pl. 108, fig. 23; *C. & S.* no. 1861.

♂. Differs from *tropica* in the head and thorax being browner; the basal area of fore wing much darker yellow, so that the markings are almost entirely obliterated; the whole outer area deep red-brown, with the markings indistinct. Hind wing with the veins and outer area suffused with dark fuscous.

♀. Head, thorax, and fore wing dark red-brown, the last with a white medial streak on costa and postmedial triangular spot, the pattern being almost obliterated; abdomen and hind wing dark fuscous, the former with slight pale rings.

Hab. Throughout India, Ceylon, and Burma. *Exp.* 24 millim.

2033. **Tarache crocata**, *Guen. Noct.* ii, p. 218; *C. & S.* no. 1832.
Acontia signifera, *Wlk. Cat.* xii, p. 796.
Acontia meridionalis, *Wlk. Cat.* xxxiii, p. 785; *C. & S.* no. 1841.
Acontia scanda, *Feld. Reis. Nov.* pl. 108, fig. 27; *C. & S.* no. 1848.

♂. Differs from *imbuta* in the fore wing having the outer half red-brown, suffused with purplish; the reniform purplish, with a yellow centre; a triangular postmedial spot on the costa, from which arises an incurved dark dentate postmedial line; an indistinct dentate yellow submarginal line. Hind wing yellow, with a broad irregular black-brown band.

♀ with the whole ground-colour of the fore wing purplish red-brown; a short yellow antemedial line from the costa; quadrate medial and triangular postmedial costal spots. Hind wing with the basal two-thirds bright orange.

Hab. Simla; Dharmsála; Bombay; Coimbatore. *Exp.* 22 millim.

2034. **Tarache nubilosa**, n. sp.

♂. Head reddish; thorax greyish white; abdomen pale fuscous. Fore wing dull white; the basal half of costa with conjoined dark blotches; medial area rufous and dark brown, bounded inwardly by a waved black line; the reniform black, with a grey line excurved round end of cell beyond it; marginal area clouded with grey. Hind wing fuscous.

Hab. Simla (*Harford*). *Exp.* 20 millim. Type in B. M.

2035. **Tarache fascialis**, n. sp.

♂. Head and thorax dark brown; abdomen paler, with pale segmental rings. Fore wing dark reddish brown; the costal area sulphur-yellow, sending a spur to beyond lower angle of cell; a sulphur fascia below median nervure from base to beyond middle; a sulphur band on outer margin. Hind wing reddish brown.

♀. Dark olivaceous brown. Fore wing with slight grey suffusion; grey streaks at the two angles of cell, and a grey line on outer margin.

Hab. Sind and Gurais Valleys, Kashmir (*Leech*). *Exp.* 24 millim. Type in coll. Leech.

2036. **Tarache sulphuralis**, *Berget. Ins. Suec.* i, p. 16; *C. & S.* no. 1879.

Bombyx lugubris, *Fabr. Ent. Syst.* iii, 1, p. 467.
Pyralis trabealis, *Scop. Ent. Carn.* 610.
Noctua arabica, *Berl. Mag.* iii, 412.
Noctua sulphurea, *Hübn. Eur. Schmett. Noct.* pl. 60, fig. 291.

Head and throax black; frons, collar, tegulæ, and metathorax marked with yellow; abdomen fuscous, the segments ringed with ochreous. Fore wing yellow, with broad black stripes along median nervure and inner margin; two pairs of obliquely placed spots on costal area; an irregular oblique postmedial band with a leaden-coloured band on it; a submarginal series of black spots and marginal series of specks; cilia brownish. Hind wing fuscous

black, the cilia pale. Underside of fore wing yellow, with irregular black markings; hind wing with black cell-spot and postmedial and submarginal bands.

Hab. Europe; Turkestan; Japan; China; Baluchistan; Afghanistan. *Exp.* 24 millim.

2037. **Tarache flavonigra,** *Swinh. P. Z. S.* 1884, p. 522, pl. 47, fig. 15; *C. & S.* no. 3026.

Head and collar fuscous black; thorax and abdomen ochreous. Fore wing with the base pale ochreous; a black spot at base of costa; the outer two-thirds of wings fuscous black. Hind wing pale.

In the Bombay specimen the distal part of the abdomen and hind wing are dark fuscous.

Hab. Aden; Sind; Bombay. *Exp.* 16–20 millim.

Genus **XANTHOPTERA.**

Xanthoptera, *Guen. Noct.* ii, p. 240 (1852).
Phyllophila, *Guen. Noct.* ii, p. 254.
Bagada, *Wlk. Cat.* xv, p. 1753 (1858).
Hiccoda, *Moore, Lep. Atk.* p. 134 (1882).

Type, *X. botyoides*, Guen., from Brazil.

Range. Nearctic, Neotropical, and Oriental regions.

Palpi upturned, reaching vertex of head, and smoothly scaled; antennæ minutely ciliated in male; thorax and abdomen without tufts. Fore wing rather short and broad, vein 8 given off from 7 and anastomosing with 9, which is given off from 10 to form the areole. Hind wing with veins 3 and 4 from cell or on a very short stalk.

Larvæ with 4 pairs of abdominal prolegs.

Sect. I. Female with antennæ almost simple.

2038. **Xanthoptera marginata,** *Wlk. Cat.* xxxv, p. 1775; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 21.

Head, thorax, and fore wing bright straw-yellow; the last with a marginal black band, bordered inwardly by a deep black slightly waved line. Abdomen, hind wing, and underside fuscous or smoky black.

Hab. Dharmsála; Nilgiris; Java. *Exp.* 20 millim.

2039. **Xanthoptera flavifrons,** *Moore, Lep. Ceyl.* iii, p. 552, pl. 214, fig. 8; *C. & S.* no. 2824.

♂. Uniform brownish ochreous; the head bright yellow; antennæ and base of palpi fuscous; the front of thorax tinged with fuscous. Fore wing with a slight purplish tinge.

Hab. Ceylon. *Exp.* 24 millim.

2040. **Xanthoptera fuscicilia**, *Hmpsn. Ill. Het.* viii, p. 75, pl. 145, fig. 17.

Head, thorax, and fore wing bright reddish ochreous; the cilia fuscous. Abdomen and hind wing ochreous, suffused with fuscous. Underside fuscous, the costa and outer margin ochreous; hind wing with cell-spot.

Hab. Nilgiris. *Exp.* 20 millim.

2041. **Xanthoptera argentifrons**, *Butl. Ill. Het.* vii, p. 65, pl. 130, fig. 1.

Head and thorax black; abdomen fuscous. Fore wing pale straw-yellow; the base black; triangular black costal marks at centre and before apex, the latter small; the outer margin and cilia black; the ochreous area deeper in tone towards the margin, and running out to the margin below apex and at centre. Hind wing fuscous.

Hab. Dharmsála. *Exp.* 20 millim.

2042. **Xanthoptera triangularis**, *Warr. P. Z. S.* 1888, p. 309.

♀. Differs from *argentifrons* in the ground-colour of the fore wing being pale pinkish brown; the basal black patch and medial costal patch larger; the costal patch before the apex absent; the marginal black band more regular.

Hab. Campbellpur. *Exp.* 17 millim.

2043. **Xanthoptera mianoides**, *Hmpsn. Ill. Het.* ix, p. 98, pl. 162, fig. 16.

♂. Head and thorax dark brown; abdomen fuscous, with pale rings. Fore wing with the basal half dark brown, with four waved black lines on it; a black subbasal spot below median nervure; the orbicular represented by a black speck on the fourth line; the reniform by a black lunule on the line terminating the dark area which is bent inwards below the cell; the outer half of wing ochreous white, the outer area suffused with brown; a faint postmedial line highly excurved beyond the cell; an indistinct pale waved submarginal line. Hind wing fuscous brown.

♀. Fore wing with the outer area the same colour as the basal half of wing, crossed by a broad white band traversed by the postmedial line.

Hab. Ceylon. *Exp.* 20 millim.

2044. **Xanthoptera opella**, *Swinh. P. Z. S.* 1885, p. 456, pl. 27, fig. 16; *C. & S.* no. 1858.

Differs from *mianoides* in the outer edge of the dark basal area of the fore wing being straighter; the postmedial line less excurved;

the submarginal line straighter, and with a dark sinus on it below middle.

In the type from Poona the postmedial and submarginal lines have gilded scales on them; in the Campbellpur specimen the head, thorax, abdomen, and base of fore wing are ochreous.

Hab. Simla; Campbellpur; Karáchi; W. India. *Exp.* 19 millim.

2045. **Xanthoptera melanchlæna**, *Swinh. Trans. Ent. Soc.* 1891, p. 148.

♂. Head and thorax black-brown; abdomen paler. Fore wing purplish black-brown; a postmedial pale band, which is traversed by a dark line slightly excurved beyond the cell; traces of a submarginal line becoming pale towards outer area. Hind wing dark fuscous.

Hab. N. Canara. *Exp.* 17 millim.

2046. **Xanthoptera excisa**, *Swinh. P. Z. S.* 1885, p. 455; *C. & S.* 1834.

Acontia quintana, *Swinh. P. Z. S.* 1885, p. 455, pl. 27, fig. 13; *C. & S.* no. 1847.

Head, thorax, and abdomen olive-brown. Fore wing white; an olive-brown basal patch with black marks on its outer edge; an indistinct antemedial waved line; a broad medial leaden-grey band with a black spot on it at end of cell, and some waved blackish marks towards its outer edge; a waved postmedial line; outer area grey, with a waved submarginal line on it. Hind wing pale fuscous, with an indistinct pale medial line.

Some specimens have hardly any white on each side of the postmedial line; others are large and dark; the form *quintana* is without olive and brown tints, the grey of outer area of fore wing broken into patches.

Hab. Simla; Dharmsála; W. India; Coimbatore. *Exp.* 18–22 millim.

2047. **Xanthoptera nigripalpis**, *Wlk. Cat.* xxxv, p. 1965; *C. & S.* no. 1842.

Hiccoda dosaroides, *Moore, Lep. Atk.* p. 135; *id. Lep. Ceyl.* iii, pl. 150, fig. 16; *C. & S.* no. 1818.

Ochreous. Fore wing with some dark specks on costa; traces of waved subbasal, antemedial, medial, and postmedial rufous lines, the last recurved beyond the cell; reniform large, rufous, and suffused with fuscous; cilia pinkish, chequered with black. Hind wing fuscous, the cilia ochreous; underside with cell-spot and postmedial line.

Hab. N.W. Himalayas; throughout Peninsular India and Ceylon. *Exp.* 18 millim.

2048. **Xanthoptera veprecola**, *Swinh. P. Z. S.* 1885, p. 456; *C. & S.* no. 1875.

♂. Head, thorax, and abdomen pale brown. Fore wing red-brown, irrorated with dark scales and with dark streaks on and between the veins of outer area; irregularly dentate ante- and postmedial lines, the latter excurved round end of cell; orbicular and reniform large, pinkish brown, and somewhat prominent; traces of a pale submarginal line. Hind wing pale fuscous.

Hab. Poona. *Exp.* 20 millim.

2049. **Xanthoptera plebeia**, *Butl. Ill. Het.* vii, p. 61, pl. 129, fig. 3.

Ochreous, irrorated with dark brown scales. Fore wing with the subbasal and antemedial waved lines single, pale, and indistinct; the orbicular and reniform ochreous white; the postmedial waved line slightly excurved; medial diffused purplish fuscous band conjoined at median nervure to the purplish-fuscous shade which is diffused over the whole outer area, except a costal patch and another beyond the lower part of the postmedial line; some black marginal spots. Hind wing fuscous.

Hab. Dharmsála; Bhután. *Exp.* 22 millim.

2050. **Xanthoptera spicea**, *Guen. Noct.* i, p. 226.

Perigea tricycla, *Guen. Noct.* i. p. 226; *C. & S.* no. 2103.
Bagada pyrochroma, *Wlk. Cat.* xv, p. 1753; *Hmpsn. Ill. Het.* ix, pl. 162, fig. 2, & pl. 176, fig. 20 (larva); *C. & S.* no. 1876.
Acontia firina, *Swinh. P. Z. S.* 1885, p. 455, pl. 27, fig. 5; *C. & S.* no. 1835.

Head, collar, and patagia reddish ochreous; thorax grey; abdomen ochreous. Fore wing reddish ochreous, with traces of numerous transverse lines in the form of strigæ and specks on the costa; the orbicular a pale blotch with black centre; reniform similar, but figure-of-8-shaped, and with a black spot beyond it on the indistinct curved postmedial line, beyond which is a series of grey specks; an oblique dark streak from the apex; a marginal series of black specks; the inner margin grey, becoming black at outer angle. Hind wing ochreous fuscous, with indistinct broad marginal darker band.

Fig. 171.
Xanthoptera spicea, ♂. ⅟₁.

In the form *tricycla*=*pyrochroma* the fore wing is redder, the area below the cell and outer area being very bright chestnut.

Larva pink; the dorsal area speckled with small white spots; dorsal and subdorsal white lines; a broad pale yellow lateral stripe. Head greenish.

Hab. Simla; Sylhet; W. India; Nilgiris; Ceylon; Java. *Exp.* 24–28 millim.

2051. **Xanthoptera magna**, *Swinh. MS.*

Differs from the form *tricycla* in the metathorax only being grey. Fore wing greenish yellow, less irrorated with black; the orbicular and reniform almost or quite obsolete; the inner and marginal reddish areas more suffused with bluish grey. Hind wing dark fuscous. Underside with indistinct postmedial line and pale marginal band to both wings.

Hab. Sikhim, Khásis. *Exp.* 40 millim. Type in B. M.

2052. **Xanthoptera nigridia**, *Swinh. MS.*

♂. Differs from *magna* in the cilia of the fore wing being crenulate; the head and thorax rufous, suffused with black. Fore wing rufous, with the obicular and reniform more distinct; the outer area below the oblique line from the apex suffused with black; the inner area also slightly suffused. Abdomen and hind wing black; the cilia reddish. Underside with the costa and outer margin of both wings irrorated with red.

♀. Brownish ochreous, the abdomen reddish. Fore wing without black suffusion; the black spot beyond outer edge of reniform prominent. Hind wing reddish, the outer area suffused with fuscous. Underside much paler; hind wing more suffused with red.

Hab. Khásis. *Exp.* 38 millim. Type in B. M.

2053. **Xanthoptera grisea**, *Hmpsn. Ill. Het.* viii, p. 63, pl. 142, fig. 7.

♂. Grey, uniformly irrorated with grey-brown. Fore wing with an angled medial dark line, with rust-red patches before it in and below end of cell; the outer area slightly suffused with rust-red scales; a submarginal dark line slightly bent below the costa.

Hab. Nilgiris; Nágas. *Exp.* 30 millim.

SECT. II. Female with the antennæ strongly ciliated.

2054. **Xanthoptera modesta**, *Moore, Lep. Ceyl.* iii, p. 55, pl. 150, fig. 13; *C. & S.* no. 1908.
Phillophila grisea, *Hmpsn. Ill. Het.* ix, p. 100, pl. 162, fig. 10.

♀. Head and collar clothed with light and dark brown scales; thorax white, irrorated with a few brown scales; abdomen pale fuscous. Fore wing whitish, thickly irrorated with brown; a black speck at base; the reniform dark; some dark strigæ on costa; a prominent series of marginal specks. Hind wing pale fuscous; underside with cell-spot, minutely crenulate postmedial line, and marginal series of specks.

The form *grisea* has the reniform spot obsolete.

Hab. Ceylon. *Exp.* 30 millim.

Genus COSMIA.

Cosmia, *Ochs. Eur. Schmett.* iv, p. 84 (1816).
Elydna, *Wlk. Cat.* xv, p. 1712 (1858).

Type, *C. diffinis*, Linn., from Europe.
Range. Europe; Japan; China; Himalayas; Burma.
Differs from *Xanthoptera* in being more stoutly built; the outer margin of fore wing more oblique towards outer angle, and with the cilia crenulate.
Larvæ with four pairs of abdominal prolegs.

2055. **Cosmia restituta**, *Wlk. Cat.* x, p. 490; *C. & S.* no. 1794.

Head and thorax chestnut; abdomen fuscous. Fore wing chestnut, slightly suffused with fuscous; an oblong subbasal white spot on the costa; a quadrate antemedial spot extending as a narrow line across the cell; a triangular patch, followed by a linear spot before the apex; traces of subbasal and antemedial dark lines; faint traces of orbicular and reniform stigmata, and highly curved postmedial and submarginal lines. Hind wing dark fuscous, with the cilia yellow. Underside reddish ochreous, suffused in parts with fuscous; a cell-spot and postmedial line to both wings.

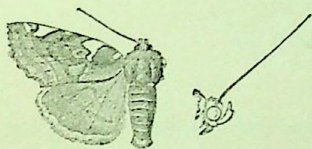



Fig. 172.
Cosmia restituta, ♂. ½.

The Nepal specimen is much darker and less red.
Hab. Murree; Nepal. *Exp.* 30–38 millim.

2056. **Cosmia affinis**, *Linn. Syst. Nat.* xii, p. 848.

Head, thorax, and fore wing pale or bright red-brown: abdomen fuscous, with slight pale segmental rings and ochreous anal tuft. Fore wing with whitish indistinct short subbasal, obliquely sinuous antemedial, and postmedial line excurved beyond the cell; traces of a fuscous medial line and of orbicular and reniform spots; an indistinct pale sinuous submarginal line. Hind wing nearly uniform dark fuscous, or the basal area pale, the outer blackish; cilia bright yellow.
The fore wing may be suffused in parts with black and the apical area with white.
Hab. Europe; Japan; Gurais Valley, Kashmir. *Exp.* 32–38 millim.

2057. **Cosmia transversa**, *Wlk. Cat.* xv, p. 1713; *C. & S.* no. 1122.

♀. Head, thorax, and fore wing ochreous, irrorated with dark scales; the last with an oblique dark antemedial line; a post-

medial line angied at vein 6 and slightly curved towards inner margin; curved submarginal and marginal lines. Abdomen and hind wing brighter yellow.

Hab. Moulmein. *Exp.* 38 millim.

2058. **Cosmia ochracea**, n. sp.

♀. Ochreous. Fore wing irrorated with a few black scales; a waved antemedial erect line; a postmedial crenulate line, slightly angled and regularly excurved beyond the cell; a submarginal irregularly crenulate line, with a series of dark specks beyond it; the cilia fuscous. Hind wing orange-yellow, especially towards outer margin. Underside with small cell-spots.

Hab. E. Pegu, 5000 feet (*Doherty*). *Exp.* 40 millim. Type in coll. Elwes.

Genus ACONTIA.

Acontia, *Ochs. Eur. Schmett.* iv, p. 91 (1816).
Xanthodes, *Guen. Noct.* ii, p. 209 (1852).

Type, *A. malvæ*, Esper.

Range. Universally distributed in the tropical, subtropical, and warmer temperate zones.

Palpi long, porrect, and met by a short sharp frontal tuft, the 3rd joint prominent; antennæ simple; thorax and abdomen smoothly scaled and without tufts. Fore wing with the cilia non-crenulate; veins 7, 8 and 9, 10 stalked.

Larvæ with four pairs of abdominal prolegs.

SECT. I. Male with the palpi smoothly scaled in front; the tibiæ not hairy; the fore wing not excised towards outer angle.

2059. **Acontia malvæ**, *Esper*, *Schmett.* iv, 2, p. 63, pl. 195, fig. 4.
Xanthodes stramen, *Guen. Noct.* ii, p. 210; *C. & S.* no. 1812.
Xanthia imparata, *Wlk. Cat.* x, p. 467; *C. & S.* no. 1807.
Xanthodes impellens, *Wlk. Cat.* xv, p. 1752; *C. & S.* no. 1808.
Xanthodes inefficiens, *Wlk. Cat.* xv, p. 1752; *C. & S.* no. 1809.

Head whitish; thorax bright canary-yellow; abdomen ochreous. Fore wing bright canary-yellow, with an oblique waved antemedial line; reniform oval, with a brown outline or often obsolete; a postmedial line highly excurved beyond the cell and angled towards inner margin; two submarginal lines, the inner line angled below the costa; a large diffused triangular patch extending over the whole of the outer area, its apex running up to the costa at the postmedial line. Hind wing iridescent white, sometimes suffused with brownish or ochreous, or with the apical area only brownish or ochreous.

Hab. Europe; Formosa; throughout India. *Exp.* 30-36 millim.

SECT. II. Male with the palpi more hairy in front; the tibiæ clothed with long hair; the fore wing with the outer margin more or less excised towards outer angle.

2060. **Acontia transversa**, *Guen. Noct.* ii, p. 211, pl. 10, fig. 5.
Xanthodes flava, *C. & S.* no. 1805 (*nec Fabr.*); *Moore, Lep. Ceyl.* iii, pl. 149, figs. 2, 2 *a* (larva).

Bright canary-yellow; palpi and legs red-brown; vertex of thorax tinged with rufous. Fore wing with ante- and postmedial highly angulated rufous lines, which are sometimes waved, the

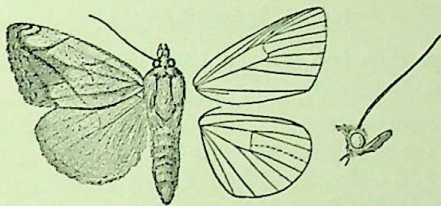



Fig. 173.—*Acontia transversa*, ♂. ½.

latter touching a submarginal angled line; a large bright rufous triangular patch occupying the whole outer area, and sometimes produced backwards along median nervure to the base, or occasionally almost obsolete; a black subapical speck; cilia rufous. Hind wing slightly suffused with red-brown, the outer margin rufous.

Larva pale green, with a few very fine hairs; subdorsal, lateral, and sublateral series of white spots, the subdorsal series with a larger yellow spot on each somite.

Pupa pale pinkish red.

Hab. China; throughout India, Ceylon, and Burma; Java; Duke of York Isle. *Exp.* 40–44 millim.

2061. **Acontia intersepta**, *Guen. Noct.* ii, p. 212; *Moore, Lep. Ceyl.* iii, pl. 149, fig. 3; *C. & S.* no. 1811.
Acontia imitata, *Moore, Lep. Ceyl.* iii, p. 42, pl. 149, fig. 4; *C. & S.* no. 1837.

Differs from *transversa* in having the palpi pure white in front; the vertex of head whitish; the thorax not tinged with rufous. Fore wing with the transverse lines reduced to a series of specks, the antemedial series curved.

Hab. Throughout India, Ceylon, and Burma; Java. *Exp.* 44–50 millim.

2062. **Acontia grællsii**, *Feisth. Ann. Soc. Ent. Fr.* vi (1837), p. 300, pl. 12, fig. 3; *C. & S.* no. 1806.
Xanthodes innocens, *Wlk. Cat.* xv, p. 1752; *C. & S.* no. 1810.
Xanthodes fimbriata, *Wlk. Cat.* xxxiii, p. 777.

Differs from *intersepta* in the fore wing having no transverse series of specks, these being represented at most by specks below the costa; a rufous fascia from lower angle of cell to outer margin below apex replacing the large triangular patch. Hind wing pure white, the apical area suffused with ochreous.

Hab. S. Europe; W. and S. Africa; Mauritius; Aden; throughout Peninsular India. *Exp.* 36–43 millim.

Genus MARIMATHA.

Marimatha, *Wlk. Cat.* xxxiv, p. 1204 (1865).

Type, *M. dinumeratalis*, Wlk., from Honduras.

Range. Neotropical region; Africa; Aden; Khásis; Nilgiris.

Palpi with the 2nd joint reaching above vertex of head, the 3rd long; thorax and abdomen without tufts; antennæ ciliated. Fore wing with the apex almost rectangular; veins 8 and 9 anastomosing to form the areole. Hind wing with veins 3, 4 from cell.

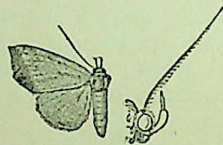



Fig. 174.
Marimatha subflavalis, ♂. ½.

2063. **Marimatha subflavalis**, *Wlk. Cat.* xxxiv, p. 1205; *C. & S.* no. 1869.

Ochreous; the head pinkish. Fore wing with a black speck at end of cell; the outer area black, except at apex. Hind wing paler; the outer area fuscous.

Hab. Kilimanjaro; Aden; Nilgiris. *Exp.* 24 millim.

2064. **Marimatha xanthoptera**, n. sp.

♂. Differs from *subflavalis* in the thorax and fore wing being bright yellow. Fore wing with the outer area, except at apex, bright chestnut, with some fuscous suffusion. Hind wing and underside suffused with fuscous; cilia of both wings pinkish.

Hab. Khásis, 6000 feet (*Elwes*). *Exp.* 26 millim. Type in coll. Elwes.

Genus SWINHOEA, nov.

Type, *S. vegeta*, Swinh.

Range. Abyssinia; Punjab; Bombay.

Palpi upturned, the 2nd joint roughly scaled, the 3rd long and slender; frons with a rounded projection; antennæ of male minutely ciliated; thorax and abdomen smoothly scaled; tibiæ

slightly hairy. Fore wing of nearly even width throughout; the apex nearly rectangular; veins 8 and 9 anastomosing to form the areole. Hind wing with veins 3, 4 and 6, 7 from cell.

2065. **Swinhoea vegeta**, *Swinh. P. Z. S.* 1885, p. 475, pl. 28, fig. 14; *C. & S.* no. 3043.

♂. Head and collar fuscous; thorax vinous; abdomen fuscous. Fore wing vinous brown, the base pale, the outer two-thirds much darker; an indistinct short pale subbasal line; a black speck above inner margin near base; obliquely waved antemedial, medial, and postmedial lines. Hind wing fuscous underside with indistinct cell-spot and postmedial line.

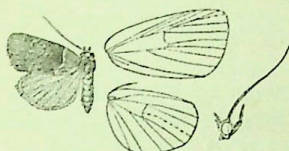



Fig. 175.
Swinhoea vegeta, ♂. ½.

Hab. Abyssinia; Punjab; Bombay *Exp.* 22 millim.

Genus METACHROSTIS.

Metachrostis, *Hübn. Verz.* p. 204 (1818).
Ozarba, *Wlk. Cat.* xxxii, p. 684 (1865).

Type, *M. velox*, Hübn., from Europe.

Range. Europe; Japan; China; throughout India, Ceylon, and Burma; Java; Australia.

Palpi long and upturned, reaching above vertex of head; thorax and abdomen without tufts. Fore wing with veins 8, 9, 10 stalked; vein 7 sometimes almost or quite touching 8, and forming an areole.

SECT. I. (*Metachrostis*). Ground-colour purplish or brownish grey.

A. *Antennæ strongly ciliated in male.*

2066. **Metachrostis miasma**, *Hmpsn. Ill. Het.* viii, p. 73, pl. 145, fig. 16.

Dark purplish grey. Fore wing crossed by some eight or nine ill-defined and diffused fuscous-black waved lines; the orbicular a black speck, the reniform a black spot. Hind wing dark fuscous.

Hab. Nilgiris. *Exp.* 19 millim.

2067. **Metachrostis egens**, *Moore, Lep. Ceyl.* iii, p. 68, pl. 151, fig. 9; *C. & S.* no. 2216.
Metachrostis contingens, *Moore, P. Z. S.* 1888, p. 412; *Butl. Ill. Het.* vii, p. 65, pl. 129, fig. 13.

Pale grey-brown. Fore wing with subbasal, antemedial, medial, and postmedial waved dark lines arising from fuscous spots on the costa; the postmedial line indistinct; the orbicular a speck; reniform represented by parallel lines; an indistinct dentate submarginal line. Hind wing with the inner half irrorated with dark scales and with traces of medial, postmedial, and submarginal dark lines on it.

Hab. Dharmsála; Ceylon. *Exp.* 21 millim.

2068. **Metachrostis fasciata,** *Hmpsn. Ill. Het.* viii, p. 91, pl. 147 fig. 10.

Fuscous, suffused with grey. Fore wing with subbasal, antemedial, medial, and postmedial waved lines, the 1st short, the 3rd excurved round cell, the last irregular; a dark mark on discocellulars; a crenulate submarginal line; a series of marginal dark specks. Hind wing with four indistinct waved black lines and a marginal series of specks.

The male has some pale red-brown on disk of fore wing and submarginal line and cilia of both wings.

Hab. Nilgiris. *Exp.*, ♂ 30, ♀ 26 millim.

B. *Antennæ almost simple in male.*

2069. **Metachrostis quinaria,** *Moore, P. Z. S.* 1881, p. 371; *C. & S.* no. 1902.

Differs from *egens* in being less brown; the costal spots of the fore wing black; the reniform ill-defined.

Hab. N.W. Himalayas; Punjab; Karáchi; Mhow. *Exp.* 23 millim.

2070. **Metachrostis obliquisigna,** n. sp.

♂. Fuscous grey, irrorated and suffused with black-brown. Fore wing crossed by six indistinct waved lines; an oblique black band from costa to lower angle of cell. Hind wing crossed by five indistinct waved lines; both wings with marginal black line.

Hab. Dharmsála (*Hocking*). *Exp.* 19 millim. Type in B. M.

2071. **Metachrostis obscura,** n. sp.

♂. Dark grey. Fore wing with very obscure darker lines and bands, the most distinct of which are an oblique band from just beyond the lower angle of cell to inner margin and a diffused sinuous submarginal band. Vein 7 of the fore wing just touches 8 and 9, and forms a slight areole.

Hab. Nágas, 6000 feet (*Doherty*). *Exp.* 26 millim. Type in coll. Elwes.

SECT. II. (*Ozarba*). Ground-colour brown or ochreous.

A. *Antennæ serrate in male.*

2072. **Metachrostis destituta,** *Moore, Lep. Ceyl.* iii, p. 48, pl. 150, fig. 6; *C. & S.* no. 1860.

Pale reddish brown. Fore wing with a dark brown band between the subbasal and antemedial double waved lines; a dark medial band slightly angled on median nervure; reniform with dark outline; a postmedial waved line; the submarginal line indistinct and arising from a large dark triangular mark on the costa with a black spot on its lower edge. Hind wing fuscous.

Hab. Khásis; Ceylon. *Exp.* 20 millim.

B. *Antennæ almost simple in male.*

a. *Fore wing with the outer margin not excurved at centre.*

2073. **Metachrostis undulata,** *Hmpsn. Ill. Het.* ix, p. 98, pl. 162, fig. 20.

♂. Ochreous white. Head and collar fuscous; thorax and fore wing irrorated with black scales, the latter with black spots on the costa; a black spot at base; traces of six very ill-defined waved lines; reniform a large fuscous-black spot in the curve of the postmedial line; hind wing pale. Underside of fore wing with black costal spots towards apex; hind wing with discocellular and postmedial lines.

Hab. Ceylon. *Exp.* 18 millim.

2074. **Metachrostis conspersa,** *Butl. P. Z. S.* 1880, p. 673.
Miresa quadrinotata, *Moore, P. Z. S.* 1888, p. 403; *C. & S.* no. 1315 A.

Ochreous. Fore wing more or less irrorated with black, and with black specks in and at end of cell.

Hab. Formosa; Kúlú. *Exp.* 20 millim.

2075. **Metachrostis acervalis,** *Swinh. P. Z. S.* 1886, p. 451; *C. & S* no. 2690.

♂. Almost uniform pale ochreous, with a slight purplish-fuscous tinge; the head and collar pure white; palpi tinged with fuscous at sides. Fore wing with traces of a dark speck at end of cell and one or two beyond it; a greyish streak from end of cell to outer margin and some marginal greyish streaks in the interspaces; a black speck sometimes present near outer angle. Hind wing with the outer area suffused with greyish.

Hab. Mhow. *Exp.* 20 millim.

2076. Metachrostis incondita, *Butl. Ill. Het.* vii, p. 69, pl. 130, fig. 13.

Dark reddish brown. Fore wing with ochreous specks on the costa; an indistinct band between the slightly waved subbasal and antemedial lines; a diffused medial band interrupted by the large reniform spot, which is defined by an ochreous and black lunule on its inner edge, its outer edge by two sinuations of the postmedial line, beyond which is a trilobed black patch; the apical area darker; an irregularly undulated submarginal line. Hind wing dark fuscous; underside with cell-spot, postmedial and submarginal lines.

Hab. Dharmsála; Bhután; Calcutta. *Exp.* 20–22 millim.

2077. Metachrostis hypenoides, *Butl. Ill. Het.* vii, p. 65, pl. 130, fig. 2.

♂. Head, thorax, and abdomen fuscous. Fore wing pale pinkish brown; traces of subbasal and antemedial waved lines; a prominent medial sinuous line with some blackish suffusion inside it; the reniform black and triangular; an indistinct sinuous submarginal pale line with some dark suffusion inside it at costa. Hind wing pale fuscous.

♀. With the blackish suffusion inside the medial line of fore wing forming a wide band.

Hab. Simla; Dharmsála. *Exp.*, ♂ 20, ♀ 24 millim.

2078. Metachrostis unduligera, *Butl. Ill. Het.* vii, p. 63, pl. 129, fig. 9.

Head and thorax grey-brown; metathorax fringed with white; abdomen ochreous brown. Fore wing grey-brown, with indistinct waved double subbasal and antemedial lines; the orbicular and reniform indistinct, usually with a dark patch between them, from which proceeds a dark line, angled below the cell, to inner margin; a pale postmedial line excurved and bracket-shaped beyond the cell; traces of a pale sinuous submarginal line. Hind wing dark fuscous.

Hab. Dharmsála; Simla. *Exp.* 18–20 millim.

2079. Metachrostis rectifascia, n. sp.

♀. Dark brown. Fore wing with a dark subbasal mark and antemedial lunule below median nervure; a broad slightly oblique medial band with black edges, its inner part ochreous, its outer brown, and with a dark patch beyond it at centre; an indistinct submarginal ochreous waved line with a dark patch inside it at costa, one beyond it at middle of outer margin, and a third at outer angle; a dark marginal line; cilia ochreous. Hind wing

dark fuscous, with the cilia ochreous. Underside with traces of a medial pale band and submarginal series of specks to both wings.
Hab. Bombay. *Exp.* 28 millim. Type in B. M.

2080. **Metachrostis transversa**, *Moore, Lep. Ceyl.* iii, p. 57, pl. 150, fig. 15; *C. & S.* no. 1911.

♂. Differs from *rectifascia* in being dark fuscous; abdomen with grey fringes to the segments. Fore wing with an indistinct antemedial line; the medial band with a dark line towards its outer edge instead of the brown shade; the submarginal line whitish, with but slight traces of the dark patches on each side of it; the cilia grey.
Hab. Ceylon. *Exp.* 22 millim.

2081. **Metachrostis punctigera**, *Wlk. Cat.* xxxii, p. 685; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 6; *C. & S.* no. 2129.
Grammodes excavata, *Wlk. Cat.* xxxiii, p. 973; *C. & S.* no. 2677.

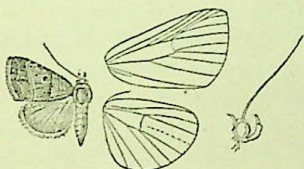



Fig. 176.
Metachrostis punctigera, ♂. 1/1.

Head and thorax purplish red-brown; abdomen fuscous. Fore wing purplish brown, with five indistinct brown lines before the middle, often almost obsolete; an erect medial line, beyond which the whole outer area is suffused with bright chestnut; the reniform with its lower half surrounded by black specks; a double postmedial ochreous line, acutely angled below the costa, then straight and oblique to inner margin; three ochreous costal specks towards apex; an irregularly waved submarginal pale line. Hind wing fuscous; both wings with a fine pale marginal line. Underside of hind wing irrorated with ochreous; a cell-spot, and postmedial and submarginal lines.
In some specimens vein 7 of the fore wing almost touches 8 and 9.
Hab. Japan; China; Dharmsála; throughout the Bombay and Madras Presidencies; Australia. *Exp.* 26–32 millim.

2082. **Metachrostis bipars**, *Hmpsn. Ill. Het.* viii, p. 75, pl. 145, fig. 2.

♂. Differs from *punctigera* in the fore wing having the black marks round the reniform more prominent; the postmedial line slightly undulated between the angle and inner margin; the submarginal line dentate.
♀ with the cilia pinkish.
Hab. Nilgiris. *Exp.* 30 millim.

2083. **Metachrostis honesta,** *Wlk. Cat.* xxxii, p. 677; *C. & S.* no. 2136.

♀. Differs from *punctigera* in being much more ochreous in tone; fore wing with the outer half paler chestnut; the postmedial line excurved beyond the cell instead of angled.

Hab. Coimbatore. *Exp.* 22 millim.

2084. **Metachrostis itwarra,** *Swinh. P. Z. S.* 1885, p. 452, pl. 27, fig. 14; *C. & S.* no. 2127.

♀. Differs from *punctigera* in the postmedial line of the fore wing not being angled, but having three undulations; the submarginal line excurved at middle.

Hab. Karáchi; Poona; Nilgiris. *Exp.* 22–26 millim.

2085. **Metachrostis badia,** *Swinh. P. Z. S.* 1886, p. 445; *C. & S.* no. 1828.

Differs from *itwarra* in being redder brown. Fore wing with the subbasal and antemedial lines almost obsolete; the medial line bounding the chestnut shade oblique towards inner margin; the black spots round the reniform smaller; the postmedial line more incurved between vein 4 and the inner margin; the submarginal line and marginal specks very indistinct.

Hab. Bombay; Mhow. *Exp.* 18 millim.

2086. **Metachrostis venata,** *Butl. Ill. Het.* vii, p. 70, pl. 130, fig. 12.

Differs from *punctigera* in being violaceous grey-brown. Fore wing with the subbasal lines very indistinct; the outer half with the veins pale and unevenly suffused with fuscous; the black specks round the reniform more prominent; the postmedial line excurved between veins 2 and 7 instead of angled; the submarginal line whitish and excurved at middle. Hind wing pale fuscous.

Hab. Dharmsála. *Exp.* 22 millim.

2087. **Metachrostis mallarba,** *Swinh. P. Z. S.* 1885, p. 452, pl. 27, fig. 3; *C. & S.* no. 2128.

Differs from *venata* in being dark fuscous. Fore wing with double subbasal and antemedial lines on pale bands.

Hab. Poona; Thyetmyo, Burma. *Exp.* 22 millim.

2088. **Metachrostis uberosa,** *Swinh. P. Z. S.* 1885, p. 457; *C. & S.* no. 1898.

♀. Differs from *mallarba* in having a greenish-yellow tinge. Fore wing with the subbasal and antemedial lines curved and indistinct; the postmedial line more angled beyond the reniform; the submarginal line more sinuous; the veins not pale.

Hab. Poona. *Exp.* 16 millim.

2089. **Metachrostis pulla,** *Swinh. P. Z. S.* 1885, p. 456, pl. 27, fig. 15; *C. & S.* no. 1845.

Pale reddish brown. Fore wing with the subbasal, ante- and postmedial double waved lines indistinct and obscured by fuscous suffusion; the submarginal waved line almost obsolete and arising from a dark costal triangular patch. Hind wing dark fuscous; underside with cell-spot and irregularly waved postmedial line.

The Ganjam specimen has the fore wing more variegated; the reniform slate-colour; a dark spot on outer margin below apex.

Hab. Ganjam; Poona; Nilgiris. *Exp.* 24 millim.

2090. **Metachrostis fusca,** *Hmpsn. Ill. Het.* ix, p. 97, pl. 162, fig. 9.

♀. Differs from *pulla* in having the outer area of fore wing dark; the lines better defined; the triangular patch of costa near apex much broader and with a black mark on its lower edge. Underside of hind wing with regularly curved postmedial and submarginal lines.

Hab. Ceylon. *Exp.* 28 millim.

2091. **Metachrostis arenacea,** *Hmpsn. Ill. Het.* ix, p. 97, pl. 162, fig. 3.

♀. Differs from *fusca* in being ochreous suffused with rufous. Fore wing with a small black ring-mark representing the orbicular; the inner edge of the reniform a black <-mark; postmedial line indistinct, with a black speck on it beyond the cell; a series of marginal black specks. Underside of hind wing with the cell-spot and lines more prominent.

Hab. Ceylon. *Exp.* 30 millim.

2092. **Metachrostis separata,** *Wlk. Cat.* xxxiii, p. 752; *C. & S.* no. 2332.

♂. Reddish grey-brown; palpi with the 2nd joint black at sides; a black spot at base of abdomen. Fore wing with basal and antemedial black spots on the costa; a large dark patch on centre of costa extending to near lower angle of cell; the reniform very indistinct, with some dark specks on its outer and lower edges; traces of a sinuous postmedial line with two dark specks on it at vein 2; a subtriangular dark costal patch before apex with white specks on it; traces of a sinuous submarginal line and marginal series of specks.

Vein 7 of the fore wing touches 8 and forms an areole.

Hab. "N. India." *Exp.* 32 millim.

2093. **Metachrostis divisa,** n. sp.

♀. Differs from *arenacea* in being red-brown. Fore wing with an oblique medial straight line, the area beyond it darker, a black

spot beyond the lunule at end of cell; some black streaks below the subtriangular costal patch, which is red-brown; the submarginal line dentate.

Another form has the basal area of fore wing grey, running out to a point below the reniform; the outer area much redder and without the dark subapical streak.

Hab. Sikhim. *Exp.* 38 millim. Type in coll. Elwes.

2094. **Metachrostis semialba,** n. sp.

♂. Ochreous white. Fore wing with the apical area red-brown from middle of costa to anal angle; dark red-brown patches on centre of costa and before apex; the reniform indistinct; a postmedial line highly angled below the costa, with a bluish-white patch inside its costal portion; a marginal series of black and white specks. Hind wing suffused with fuscous; a marginal series of black specks.

Hab. Momeit, Burma (*Doherty*). *Exp.* 26 millim. Type in coll. Elwes.

2095. **Metachrostis trigona,** *Hmpsn. Ill. Het.* viii, p. 74, pl. 145, fig. 4.

♂. Head and collar dark red-brown; thorax, abdomen, and fore wing grey, irrorated with dark-brown scales, the last with traces of waved lines; an antemedial triangular patch on the costa and larger medial patch extending to lower angle of cell and with two black specks on it; outer area suffused with brown, with pale waved submarginal and marginal lines. Hind wing fuscous; underside paler, with cell-spot, postmedial and submarginal lines.

Hab. Nilgiris. *Exp.* 24 millim.

2096. **Metachrostis brunnea,** *Hmpsn. Ill. Het.* viii, p. 74, pl. 145, fig. 11.

♀. Head, thorax, and abdomen fuscous, the last with slightly paler segmental rings. Fore wing brown, thickly irrorated and suffused with dark brown and with slight traces of waved transverse lines; some indistinct black spots on costa; a dark patch on outer margin below apex; a marginal series of black specks. Hind wing dark fuscous.

Hab. Nilgiris. *Exp.* 22 millim.

b. *Fore wing with the outer margin excurved at centre.*

2097. **Metachrostis excisa,** *Hmpsn. Ill. Het.* viii, p. 76, pl. 145, fig. 21.

Head, thorax, and abdomen dark red-brown. Fore wing suffused with grey and rufous; indistinct subbasal, antemedial, postmedial, and submarginal waved lines, the postmedial line highly excurved beyond the cell; the orbicular represented by a speck; the reni-

form with slight black outline; a dark triangular patch on the costa before apex, with three rufous costal specks on it; cilia bright rufous. Hind wing dark fuscous, the cilia rufous. Underside: fore wing with dark striæ on the costa towards apex and ochreous streaks on the veins near outer margin; hind wing with cell-spot, curved postmedial line, and submarginal series of ochreous spots.

Hab. Nilgiris. *Exp.* 26 millim.

2098. **Metachrostis emarginata,** *Hmpsn. Ill. Het.* viii, p. 76, pl. 145, fig. 22.

Dark violaceous grey; palpi blackish. Fore wing with indistinct subbasal line; a waved antemedial line angled at middle and arising from a chocolate spot on the costa; a large triangular medial costal patch, its outer edge defined by white and with a waved line arising from it; reniform large and ill-defined; the postmedial line highly excurved beyond cell and bent outwards towards inner margin; a large truncate triangular costal patch before apex, with three white costal specks on it, its outer edge defined by white; an irregularly waved submarginal line. Hind wing dark fuscous; underside with cell-spot and irregularly curved indistinct postmedial line.

Hab. Simla; Nilgiris. *Exp.* 23 millim.

Genus NARANGA.

Naranga, *Moore, P. Z. S.* 1881, p. 359.

Type, *N. diffusa*, Wlk.

Range. Japan; Formosa; throughout India, Ceylon, and Burma; Java.

Palpi with the 2nd joint reaching above vertex of head and smoothly scaled, the 3rd minute; antennæ somewhat thickened, annulate, and minutely ciliated in male; thorax and abdomen without tufts. Fore wing with veins 7, 8, 9 stalked. Hind wing with veins 3 and 4 from cell or on a short stalk.

2099. **Naranga diffusa,** *Wlk. Cat.* xxxiii, p. 779; *C. & S.* no. 1814.
Naranga quadrivittata, *Moore, Lep. Atk.* p. 134; *C. & S.* no. 1815.
Naranga ferruginea, *Moore, Lep. Atk.* p. 134; *C. & S.* no. 1813.

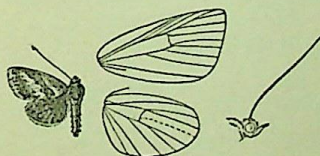



Fig. 177.
Naranga diffusa, ♂. 1/1.

♂. Head, thorax, and abdomen brownish ochreous. Fore wing bright straw-yellow; the basal area ferruginous red; a medial oblique ferruginous band; a broad marginal ferruginous band; cilia yellow. Hind wing smoky black, the cilia yellow. Underside dark fuscous; the costa of fore wing and outer margin of both wings yellow.

♀. Paler yellow. Fore wing without the basal red patch, the medial band narrow and somewhat indistinct; the marginal rufous markings reduced to an indistinct narrow oblique band from the apex. Hind wing and underside ochreous, sometimes suffused slightly with fuscous.

The form *quadrivittata* has the medial band obsolescent from the costa to vein 2.

Hab. Japan; Formosa; Dharmsála; Peninsular India and Ceylon; Burma; Java. *Exp.*, ♂ 18, ♀ 22 millim.

2100. **Naranga curvifera**, *Wlk. Trans. Ent. Soc.* 3rd ser. i, p. 91; *C. & S.* no. 1906.
Erastria securifera, *Wlk. Journ. Linn. Soc.* vii, p. 58.
Hyela senna, *Swinh. Trans. Ent. Soc.* 1891, p. 148, pl. 8, fig. 14.

Head, thorax, and abdomen pale brown. Fore wing brown; a broad white costal band slightly suffused with brown and expanding in and beyond the end of cell, where it encloses a brown spot; a marginal brown-suffused white band. Hind wing fuscous.

Hab. Ceylon; Rangoon; Borneo. *Exp.* 16 millim.

2101. **Naranga albistriga**, *Hmpsn. Ill. Het.* ix, p. 96, pl. 162, fig. 4.

♀. Head, thorax, and abdomen pale brown. Fore wing pale brown, the basal half darkest and with oblique edge; a white fascia in the cell expanding into a triangular spot at end of it; reniform indistinct and white, with a brownish centre; an indistinct white line from it to inner margin; a whitish subapical lunule bounding a dark patch on the margin. Hind wing fuscous.

Hab. Ceylon. *Exp.* 26 millim.

Genus **RIVULA**.

Rivula, *Guen. Dup. Cat. Lep. Eur.* p. 206 (1844).

Type, *R. sericealis*, Schiff.

Range. Nearctic, Palæarctic, Oriental, and Australian regions.

Palpi porrect, the 2nd joint thickly scaled, the 3rd minute; a sharp frontal tuft; antennæ minutely ciliated; thorax and abdomen smoothly scaled; the typical section has the tibiæ of male nearly naked. Fore wing with the apex nearly rectangular; veins 7, 8, 9 stalked. Hind wing with veins 3 and 4 stalked.

SECT. II. Hind tibiæ of male with a small tuft of curved scales from extremity on outer side.

2102. **Rivula biocululis**, *Moore, P. Z. S.* 1877, p. 614; *C. & S.* no. 3025.
Hydrelia opalescens, *Butl. Ill. Het.* vii, p. 64, pl. 129, fig. 10.
Hydrelia auripalpis, *Butl. Ill. Het.* vii, p. 64, pl. 129, fig. 8.
Hydrelia pallida, *Moore, Lep. Atk.* p. 197; *C. & S.* no. 3028.

Rivula trilineata, *Moore, Lep. Atk.* p. 291.
Meranda inconspicua, *Butl. Trans. Ent. Soc.* 1881, p. 583.

Yellow-brown; the palpi yellow. Fore wing with a series of white specks on the costa; an indistinct, antemedial, highly angled line; two black specks at end of cell on a grey patch; a

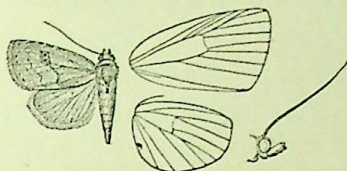



Fig. 178.—*Rivula biocularis*, ♂. ½.

postmedial waved line excurved round end of cell; a marginal series of black and white specks. Hind wing suffused with fuscous.

Trilineata = *opalescens* is a large bright form with the postmedial line of fore wing almost straight from near apex to inner margin; *auripalpis* is smaller and very dark red-brown, the hind wing dark.

Hab. Himalayas; Khásis; Calcutta; Nilgiris; Ceylon; Burma; Andamans; Borneo. *Exp.* 16–24 millim.

2103. **Rivula basalis,** *Hmpsn. Ill. Het.* viii, p. 101, pl. 148, fig. 3.

Head, thorax, and abdomen dark red-brown. Fore wing with the basal area dark red-brown, bounded by a curved ochreous antemedial line; two dark specks at end of cell; an ochreous line from middle of costa, angled outwards to near apex, then oblique to inner margin; some pale specks on costa towards apex; a marginal series of black specks. Hind wing dark fuscous.

Some specimens are much paler, being greyish red-brown.

Hab. Nilgiris; Ceylon. *Exp.* 18 millim.

SECT. III. Mid and hind tibiæ of male fringed with long hair.

2104. **Rivula renalis,** *Moore, Lep. Ceyl.* iii, p. 250; *C. & S.* no. 3037.

Head and thorax ochreous brown; abdomen fuscous. Fore wing ochreous brown; an antemedial series of black specks; a large black spot at end of cell: an obliquely curved postmedial series of black specks; a marginal series of specks. Hind wing dark fuscous. Underside with the costa of fore wing ochreous; hind wing ochreous, with lunule at end of cell.

Hab. Ceylon. *Exp.* 22 millim.

2105. **Rivula biatomea,** *Moore, P. Z. S.* 1883, p. 29; *C. & S.* no. 3034.

♂. Pale ochreous. Fore wing irrorated with fuscous, especially on outer area; the base of costa dark; two black specks at end of cell; an indistinct curved submarginal series of dark specks, and

marginal prominent series. Hind wing with the inner half fuscous brown; a marginal series of dark specks.

Hab. Nilgiris; Ceylon. *Exp.* 28 millim.

2106. **Rivula ochracea,** *Moore, Lep. Atk.* p. 197; *C. & S.* no. 3036.
Rivula biatomea, *Butl. Ill. Het.* vii, p. 17 (*nec Moore*).

♀. Bright straw-yellow. Fore wing with two black specks at end of cell; a marginal series of minute specks. Hind wing suffused with fuscous.

Hab. Dharmsála; Calcutta. *Exp.* 16 millim.

Genus TATHODELTA.

Tathodelta, *Hmpsn. Ill. Het.* ix, p. 135 (1893).

Type, *T. purpurascens*, Hmpsn.

Range. Ceylon.

Palpi upturned, reaching vertex of head, the 2nd joint thickly scaled, the 3rd minute; antennæ of male with long fasciculated cilia; thorax and abdomen smoothly scaled, the latter long with large anal tuft in male. Fore wing with the apex rounded; veins 7, 8, 9 stalked; 10, 11 stalked. Hind wing with veins 3, 4 stalked.

2107. **Tathodelta purpurascens,** *Hmpsn. Ill. Het.* ix, p. 135, pl. 168, fig. 15.

♂. Head and collar chestnut; thorax greyish fuscous; abdomen brown. Fore wing brown, suffused with grey; traces of an antemedial waved line; two black specks at end of cell; a postmedial

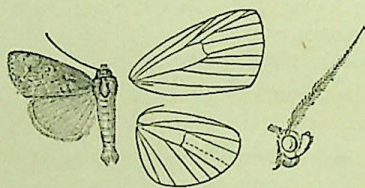



Fig. 179.—*Tathodelta purpurascens,* ♂. ½.

line excurved round cell; traces of an irregular submarginal line; a marginal series of black specks. Hind wing fuscous.

Hab. Ceylon. *Exp.* 24 millim.

Genus CINGALESA, nov.

Type, *C. strigicosta*, Hmpsn.

Range. Ceylon.

Palpi upturned, the 2nd joint reaching vertex of head, the 3rd minute; thorax and abdomen without tufts. Fore wing with vein 6 absent; 8, 9, 10 stalked. Hind wing with veins 3, 4 and 6, 7 stalked.

2108. **Cingalesa strigicosta,** *Hmpsn. Ill. Het.* ix, p. 100, pl. 162, fig. 14.

♀. Head and collar black; thorax yellowish white; abdomen fuscous. Fore wing ochreous; costa black, with some black and white strigæ on it; subbasal and antemedial lines represented by a

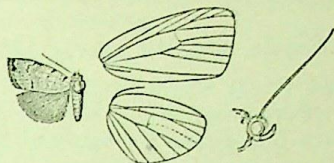



Fig. 180.—*Cingalesa strigicosta*, ♂. 1/1.

few black scales; the postmedial black line indistinct and excurved round the traces of a brownish reniform; outer margin and cilia black, expanding into a patch below the apex. Hind wing and underside fuscous black, the latter with cell-spot and postmedial line to hind wing.

Hab. Ceylon. *Exp.* 20 millim.

Genus PACHYLEPIS.

Pachylepis, *Feld. Reis. Nov., Erkl.* pls. 75–107, p. 7 (1864).

Type, *P. dilectissima*, Wlk.

Range. S. India; Ceylon; Burma; Borneo.

Palpi upturned, short, smoothly scaled, and not reaching vertex of head; antennæ simple, somewhat thickened in the male: thorax and abdomen without tufts. Fore wing with the cilia non-crenulate; veins 7, 8, 9, 10 stalked. Hind wing with veins 3, 4 and 6, 7 from angles of cell.

2109. **Pachylepis dilectissima,** *Wlk. Cat.* xv, p. 1751.
Pachylepis limacodina, *Feld. Reis. Nov.* pl. 83, fig. 12.

Head and thorax bright ferruginous, the vertex of head, collar, and metathorax with sulphur-yellow patches; abdomen black with narrow white rings, and the anal tuft white. Fore wing

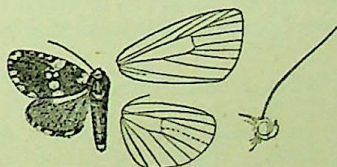



Fig. 181.—*Pachylepis dilectissima*, ♂. 1/1.

ferruginous with a yellow patch; a series of costal specks; a medial series of spots consisting of a large spot on the costa, two towards inner margin, and two small spots at middle; a series of

large marginal and cilial spots and two specks on inner margin. Hind wing black, with a series of white cilial spots. Underside variegated with white.

The Bornean race has the outer of the two central spots of the medial band larger.

Hab. Nilgiris; Ceylon; Borneo. *Exp.*, ♂ 24, ♀ 30 millim.

2110. **Pachylepis dicycla**, *Wlk. Cat.* xxxv, p. 1964; *C. & S.* no. 1833.

Head and thorax bright sulphur-yellow and ferruginous; abdomen ochreous. Fore wing bright sulphur-yellow; the basal area variegated with ferruginous; a figure-of-8 mark at end of cell; outer area ferruginous, with a series of yellow triangular marginal marks and the cilia spotted with yellow. Hind wing white with broad fuscous marginal band. Underside whitish.

Hab. "N. India"; Rangoon. *Exp.* 24 millim.

Genus **EUBLEMMA**.

Eublemma, *Hübn. Verz.* p. 256 (1818).
Anthophila, *Ochs. Eur. Schmett.* iv, p. 93 (1816) (præocc.).
Porphyrinia, *Hübn. Verz.* p. 256 (1818).
Eronome, *Hübn. Verz.* p. 256.
Heliomanes, *Sodoffsky, Bull. Soc. Nat. Mosc.* pt. x, p. 16 (1837).
Micra, *Guen. Ann. Soc. Ent. Fr.* x, p. 225 (1841).
Mestleta, *Wlk. Cat.* xxxiii, p. 829 (1865).

Type, *E. respersa*, Hübn., from Europe.

Range. N. and S. America; Africa; Palæarctic and Oriental regions; Australasia.

Palpi upturned and reaching just above vertex of head, the 3rd joint short; antennæ minutely ciliated in male; thorax and abdomen smoothly scaled; legs short, the tibiæ moderately hairy. Fore wing with the apex somewhat produced and depressed; veins 6 and 7 from angle of cell; 8, 9, 10 stalked from before the angle. Hind wing with veins 3, 4 and 6, 7 from angles of cell.

Larvæ with two pairs of abdominal prolegs.

SECT. I. Male with no pit in the membrane of fore wing towards apex, which is somewhat acute.

2111. **Eublemma bulla**, *Swinh. P. Z. S.* 1884, p. 518, pl. 47, fig. 9; *C. & S.* no. 1880.
Marimatha pura, *Swinh. P. Z. S.* 1885, p. 456, pl. 28, fig. 16; *C. & S.* no. 1868.

♂. Ochreous white. Fore wing with a few black scales at middle and end of cell, near inner margin and at outer angle. Hind wing pure white; fuscous towards outer margin in the Simla specimen.

Hab. Simla; Karáchi; Poona. *Exp.* 20 millim.

2112. **Eublemma pulchra,** *Swinh. P. Z. S.* 1886, p. 451; *C. & S.* no. 2695.

♂. Head and collar ochreous white; thorax pale pink; abdomen pale fuscous. Fore wing pinkish white; some ochreous suffusion in and below the cell; some irregularly dentate white marks on the apical part of outer margin, defined inwardly by dark suffusion. Hind wing fuscous.

Hab. Mhow. *Exp.* 23 millim.

2113. **Eublemma amabilis,** *Moore, Lep. Ceyl.* iii, p. 54, pl. 150, fig. 12; *C. & S.* no. 1909.

Ochreous white. Fore wing with antemedial diffused brown line, angled outwards in cell, the area beyond it suffused with pink except at costa; an irregularly dentate submarginal whitish line with diffused brown on its inner edge; the area beyond it slightly suffused with pink except at costa. Hind wing with the base pale; an indistinct antemedial brown line; a submarginal pale line excurved at centre, with a brown patch on its inner side and diffused pink beyond it.

Hab. Ceylon. *Exp.* 24 millim.

2114. **Eublemma virginea,** *Guen. Noct.* ii, p. 248.
Hypena quinquelinealis, *Moore, P. Z. S.* 1877, p. 612; *C. & S.* no. 2907.

Head and collar bright orange-fulvous. Fore wing white, more or less suffused with pink; the costa yellowish; two postmedial dark lines highly angled at vein 6; a white patch at apex with a pink spot on it; a pale marginal line. Hind wing whitish.

The specimen from Simla has the fore wing suffused with fuscous instead of pink; the apical spot brown; the hind wing pale fuscous, with indistinct postmedial line. The specimens from New Guinea and Australia have an indistinct submarginal line to the fore wing.

Hab. Simla; Burma; Andamans; Java; New Guinea; Australia. *Exp.* 22 millim.

2115. **Eublemma polygramma,** *Dup.* iii, *Suppl.* p. 519, pl. 44, 3 *a, b.*
Anthophila argillacea. *Eversm. Faun. Lep. Volg.-Ural.* ii, p. 339.
Thalpochares nuda, *Christ. Stettin. Ent. Zeit.* 1862, p. 221.

Differs from *virginea* in being paler. Fore wing with only one line, which is more acutely angled and white; the costa white. Hind wing with a white medial line.

Hab. Europe; Dharmsála. *Exp.* 18 millim.

2116. **Eublemma acontioides,** *Moore, Lep. Atk.* p. 179, pl. 5, fig. 15; *C. & S.* no. 2799.
Mestleta interrupta, *Moore, Lep. Ceyl.* iii. p. 209, pl. 175. fig. 7; *C. & S.* no. 2805.

Whitish; the head and collar chestnut. Fore wing with some black specks on the basal half; a diffused oblique brown band from the apex to centre of inner margin; a postmedial line from the costa to vein 3; an indistinct series of submarginal specks. Hind wing with a brown patch on the centre of inner margin: the outer margin suffused with fuscous.

Hab. Calcutta; Ceylon; Java. *Exp.* 16 millim.

2117. **Eublemma futilis,** *Swinh. P. Z. S.* 1884, p. 517, pl. 47, fig. 8; *C. & S.* no. 1798.

♀. White. Fore wing with a short subbasal line; waved ante- and postmedial lines, the latter excurved round cell, the area between them fuscous, with a few rufous scales and dark lunule on discocellulars; the outer area suffused with fuscous. Hind wing with the inner and outer areas suffused with fuscous.

Hab. Karáchi. *Exp.* 16 millim.

2118. **Eublemma rosita,** *Guen. Noct.* ii. p. 245.
Micra derogata, *Wlk. Cat.* xii, p. 825; *Moore, Lep. Ceyl.* iii, pl. 150, fig. 18; *C. & S.* no. 1881.

Head, thorax, and abdomen ochreous white. Fore wing with the basal area ochreous white, bounded by a very oblique fulvous line, beyond which the area is bright pink; the outer margin white suffused with fulvous; two white spots near outer angle,

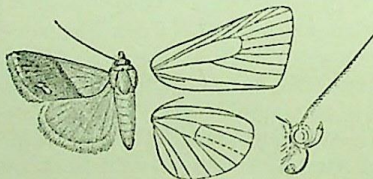



Fig. 182.—*Eublemma rosita,* ♂. $\frac{3}{1}$.

with some black scales on their outer edge. Hind wing pale, suffused with fuscous towards outer margin; some specimens have the pink area somewhat restricted.

Hab. Arabia; throughout India and Ceylon; Formosa; Australia. *Exp.* 14–18 millim.

2119. **Eublemma roseana,** *Moore, P. Z. S.* 1881, p. 370; *C. & S.* no. 1896.

Differs from *rosita* in the fore wing having the line inwardly bounding the pink patch curved, its outer edge bounded by a sinuous line excurved round end of cell; the white spots near outer angle absent.

Hab. N.W. Himalayas; Sikhim; W. and S. India. *Exp.* 14 millim.

2120. **Eublemma rivula,** *Moore, Lep. Atk.* p. 140; *C. & S.* no 1895.
Micra chalybea, *Swinh. P. Z. S.* 1884, p. 518, pl. 47, fig. 10; *C. & S.* no. 1900.

Differs from *roseana* in having no pink between the medial oblique line and excurved postmedial line.
Hab. Peninsular India; Australia. *Exp.* 14 millim.

2121. **Eublemma parva,** *Hübn. Eur. Schmett., Noct.* fig. 356.
Thalpochares parvula, *Moore, P. Z. S.* 1881, p. 369; *C. & S.* no. 1893.

Differs from *rivula* in the medial line of the fore wing being less oblique; the postmedial line less excurved beyond the cell.
Hab. Europe; Bombay. *Exp.* 16–18 millim.

2122. **Eublemma albida,** *Moore, P. Z. S.* 1881, p. 370; *C. & S.* no. 1890.

Differs from *rivula* in the ground-colour being pure white; the submarginal line not bent inwards at costa and towards inner margin, but sinuous and angled inwards at vein 3.
Hab. Bombay. *Exp.* 14 millim.

2123. **Eublemma bifasciata,** *Moore, P. Z. S.* 1881, p. 371; *C. & S.* no. 1891.

White; the collar ochreous. Fore wing with the base of costa ochreous yellow; a broad yellow medial band; the outer area yellow with sinuous inner edge.
Hab. Allahabad. *Exp.* 12 millim.

2124. **Eublemma cretacea,** *Hmpsn. Ill. Het.* ix, p. 96, pl. 162, fig. 17.

♀. Pure white; head and collar reddish brown. Fore wing with a short subbasal fuscous line; a sinuous antemedial line; the medial area slightly suffused with grey; a postmedial line excurved round the reniform, which has a blackish outline; some submarginal patches of grey shading; a subapical black speck; some rufous on apical part of margin. Hind wing with traces of postmedial, submarginal, and marginal diffused fuscous lines.
Hab. Ceylon. *Exp.* 18 millim.

2125. **Eublemma divisa,** *Moore, P. Z. S.* 1881, p. 371; *id. Lep. Ceyl.* iii, pl. 150, fig. 10; *C. & S.* no. 1882.

Head, thorax, and abdomen pale bright yellow, the thorax slightly tinged with pink. Fore wing with the basal half yellow, bounded by a slightly oblique white and black line, beyond which the area is bright pink with a slight cupreous tinge; an indistinct slightly sinuous submarginal line. Hind wing yellow.
The African form has the submarginal line of fore wing pure white.
Hab. Accra, W. Africa; Bombay; Sikhim; Bengal; Ganjam; Ceylon. *Exp.* 18 millim.

2126. **Eublemma hemirhoda**, *Wlk. Cat.* xxxiii, p. 799; *C. & S.* no. 1883.
Anthophila roseifascia, *Wlk. Cat.* xxxiii, p. 803.
Thalpochares adulans, *Feld. Reis. Nov.* pl. 108, fig. 11.

Bright ochreous yellow. Fore wing with the outer half bright rosy pink, bounded inwardly by an oblique white line; a submarginal ochreous band not reaching the costa; cilia whitish at extremities. Hind wing ochreous, fuscous towards outer margin, with patches of pink on vein 1 and at anal angle.

Hab. Ganjam; Ceylon; Java; N. Guinea. *Exp.* 22 millim.

2127. **Eublemma olivacea**, *Wlk. Cat.* xii, p. 795; *C. & S.* no. 1843.
Anthophila nebulifera, *Wlk. Cat.* xxxiii, p. 802; *C. & S.* no. 1887.

Ochreous white. Fore wing slightly suffused with brown; traces of subbasal, antemedial, medial, and postmedial pale lines, a large triangular olive-green patch on the outer area, with an excision on its upper edge, above which is a black speck, and joined to an olive patch on the discocellulars, on which is a black line; some rufous suffusion above end of cell. Hind wing white, in some specimens suffused with fuscous towards outer margin.

Hab. Punjab; Coimbatore; Ceylon. *Exp.* 22–26 millim.

2128. **Eublemma obscura**, *Moore, Lep. Atk.* p. 178, pl. 6, fig. 10; *C. & S.* no. 2795.

♀. Head and collar black-brown; thorax grey in front, reddish behind; abdomen fuscous with slight pale rings, reddish at base. Fore wing ochreous suffused with fuscous brown and with a slight reddish tinge; indistinct waved ante- and postmedial lines, the area between them darker, the latter excurved to costa, where it has a white speck on it; some white specks on costa towards apex, traces of a sinuous submarginal line. Hind wing fuscous brown, with indistinct medial line, the area beyond it paler; a marginal ochreous line to both wings.

Hab. Sikhim. *Exp.* 24 millim.

2129. **Eublemma abrupta**, *Wlk. Cat.* xxxiii, p. 830; *Moore, Lep. Ceyl.* iii. pl. 174, figs. 2, 2 *a* (larva); *C. & S.* no. 2798.

Pale red-brown; head and collar dark chestnut. Fore wing with some dark specks in the cell; a postmedial chestnut line, which is highly angled at vein 6 and double from there to inner margin; two submarginal curved series of black and white specks; an apical pale patch, with some dark suffusion round it. Hind wing with double oblique medial line, and postmedial and submarginal series of black and white specks. Underside grey, suffused with reddish and irrorated with black; the basal area of fore wing orange.

Larva reddish, with black streaks, lateral dots, and yellow transverse stripes; paired oblique white stripes across 9th and 10th

somites; the 5th, 6th, 7th, and 11th somites with dorsal prominences; the 3rd, 4th, and 5th each with four spatulate dorsal filaments. Food-plant *Ficus*. Pupa in a small cocoon attached to a leaf.

Hab. Bombay; Poona; Ceylon. *Exp*. 20 millim.

2130. **Eublemma angulifera**, *Moore, Lep. Atk.* p. 179; *id. Lep. Ceyl.* iii, pl. 175, figs. 2, 2 *a* (larva); *C. & S.* no. 2800.

Differs from *abrupta* in being suffused with purplish pink. Wings with but faint traces of the two submarginal series of specks. Fore wing with no pale patch at apex. Underside bright ochreous.

Larva red-brown, without spatulate filaments. Pupa in a small dark red cocoon.

Hab. Ceylon. *Exp*. 24 millim.

2131. **Eublemma duplexa**, *Moore, P. Z. S.* 1877, p. 611, pl. 60, fig. 5; *C. & S.* no. 2804.

♀. Orange-yellow, with a brownish tinge. Fore wing with faint antemedial and medial strigæ from the costa; a postmedial oblique brown line angled below the costa and with an ill-defined purplish-grey band beyond it; some submarginal blackish specks. Hind wing with the oblique brown line medial, and the purplish band better defined.

Hab. Andamans. *Exp*. 22 millim.

SECT. II. Fore wing with the apex produced into a slight lobe.

2132. **Eublemma quadrapex**, *Hmpsn. Ill. Het.* viii, p. 91, pl. 147, fig. 15.

♀. Bright yellow. Fore wing with some dark specks in the cell; a postmedial line very highly angled at vein 6, with a sinuous line beyond it, the area between them purple; a pinkish-white patch on the costa before apex, which is purplish with a deep chestnut spot; a dentate submarginal line. Hind wing with an oblique medial chestnut band, with an irregularly dentate line beyond it, the area between them purple; traces of a submarginal series of black specks; cilia of both wings chestnut, the tips white with a bright pink line through them.

Hab. Nilgiris; E. Pegu. *Exp*. 24 millim.

SECT. III. Male with the membrane of fore wing depressed, and forming a slight pit below the costa towards the apex.

2133. **Eublemma trifasciata**, *Moore, P. Z. S.* 1881, p. 370, pl. 38, fig. 21; *C. & S.* no. 1897.
Thalpochares quadrilineata, *Moore, P. Z. S.* 1881, p. 370, pl. 38, fig. 14; *C. & S.* no. 1894.
Mestleta baccalix, *Swinh. P. Z. S.* 1886, p. 452, pl. 40, fig. 7; *C. & S.* no. 2801.
Mestleta fasciosa, *Moore, Lep. Ceyl.* iii, p. 552, pl. 214, fig. 12.

♂. Head, thorax, abdomen, and fore wing greyish rufous; the last with antemedial, medial, postmedial, and submarginal almost straight oblique pale lines. Hind wing pale yellow, reddish towards outer margin.

Hab. Karáchi; Mhow; Mahableshwar; Ganjam; Ceylon. *Exp.* 22 milllm.

Genus **TROCTOPTERA.**

Troctoptera, *Hmpsn. Ill. Het.* ix, p. 99 (1893).

Type, *T. erubescens*, Hmpsn.

Range. Khásis; Ceylon.

Palpi slender and porrect; antennæ simple, the basal joint thickened; thorax and abdomen smoothly scaled. Fore wing with the inner margin somewhat lobed towards base; vein 5 from above angle of cell; 7, 8, 9 stalked. Hind wing with the costa excised before apex; veins 3 and 4 stalked; 6 and 7 from upper angle of cell.

2134. **Troctoptera erubescens,** *Hmpsn. Ill. Het.* ix, p. 99, pl. 157, fig. 16.

♂. Pinkish white. Fore wing with the apical area nearly pure white, the pinkish area tinged with brown outwardly; a black speck at centre of cell; a short reddish medial band between vein 2 and inner margin, traces of a curved submarginal line with two minute black specks on it at middle and another above a black patch on inner margin. Hind wing whiter; a rufous patch at middle of costa, with a quadrate white spot on it and a yellowish patch beyond it on the costa; a diffused submarginal rufous line.

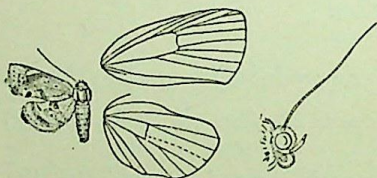



Fig. 183.—*Troctoptera erubescens*, ♂. 1/1.

Hab. Khásis; Ceylon. *Exp.* 20 millim.

Genus **ZAGIRA.**

Zagira, *Wlk. Cat.* xxxv, p. 1637 (1866).
Gyrognatha, *Hmpsn. Ill. Het.* ix, p. 134 (1893).

Type, *Z. acidaliaria*, Wlk.

Range. Japan; throughout India, Ceylon, and Burma; Borneo; Australia.

Differs from *Eublemma* in vein 8 of the fore wing being given off from 7 and anastomosing with 9 to form the areole; the legs longer and more slender; palpi with the 3rd joint longer; abdomen with slight dorsal tufts.

Larvæ with two pairs of abdominal prolegs.

SECT. I. Palpi with the 3rd joint of moderate length; fore wing with vein 10 given off from the areole.

2135. **Zagira irrecta**, *Wlk. Cat.* xxxiii, p. 1066; *Moore, Lep. Ceyl.* iii, pl. 174, figs. 1, 1 *a* (larva); *C. & S.* no. 2806.
Selenis niviapex, *Wlk. Cat.* xxxiii, p. 1069.
Selenis vacillans, *Wlk. Journ. Linn. Soc.* vii, p. 189.
Selenis inæqualis, *Wlk. Journ. Linn. Soc.* vii, p. 189.

Head and collar chestnut; thorax white, suffused with purplish grey; abdomen fulvous; wings red-brown; fore wing with a broad white purplish-suffused fascia on the costal area; a postmedial whitish line highly angled at vein 6 and slightly sinuous towards inner margin; two black subapical specks on white or ochreous spots; a white spot at apex and another on outer margin below the apex; a marginal series of black specks. Hind wing with indistinct irregularly sinuous medial and postmedial lines. Underside with the base of wings reddish.

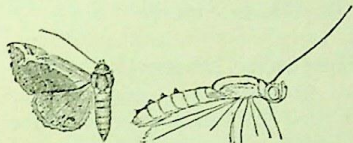



Fig. 184.—*Zagira irrecta*, ♂. ½.

The African and Indian forms are darkest; the Bornean *inæqualis* and *vacillans* are paler chestnut, the latter with the postmedial line of fore wing almost straight towards inner margin.

Larva purplish black, with short hairs; a dorsal hump on 11th somite. Pupa in a reddish cocoon.

Hab. W. Africa; Natal; throughout India, Ceylon, and Burma; Andamans; Borneo. *Exp.* 24 millim.

2136. **Zagira divisa**, *Wlk. Trans. Ent. Soc.* (3) i, p. 107; *Moore, Lep. Ceyl.* iii, pl. 174, fig. 7; *C. & S.* no. 2803.
Selenis semilux, *Wlk. Cat.* xxxiii, p. 1069.
Selenis lauta, *Butl. Ill. Het.* ii, p. 44, pl. 34, fig. 1.

Differs from *irrecta* in the colour being red-brown or black-brown; the head black or chestnut; the thorax and costal area of the fore wing pure white, or suffused with reddish ochreous; the subapical markings absent, the fascia being continued to the margin.

Hab. Japan; China; throughout India and Ceylon. *Exp.* 20 millim.

2137. **Zagira lunifera**, *Moore, Lep. Ceyl.* iii, p. 209, pl. 175, fig. 3; *C. & S.* no. 2807.

Differs from *irrecta* in the 3rd joint of palpus being longer; the thorax and costal fascia suffused with reddish ochreous; fore wing with the postmedial line bent inwards and broken up into a series of dark specks towards inner margin; a white lunule on the submarginal line below the subapical specks, the line being ochreous

and oblique from the lunule to inner margin; a dark dash from the lower end of lunule to outer margin. Hind wing with an ochreous curved submarginal line.

Hab. Aska, Ganjam; Ceylon. *Exp.* 26 millim.

2138. **Zagira longipalpis,** *Wlk. Cat.* xxxiii, p. 1068; *C. & S.* no. 2794.

Differs from *lunifera* in the ground-colour being black-brown; the costal fascia more suffused with ochreous and continued almost to the margin, obliterating the subapical markings; a white spot instead of the lunule: a submarginal curved series of ochreous specks. Hind wing with a submarginal series of ochreous specks.

Hab. Moulmein. *Exp.* 26 millim.

2139. **Zagira reticulata,** *Moore, Lep. Atk.* p. 178, pl. vi, fig. 9; *C. & S.* no. 2796.

Differs from *irrecta* in the head and collar being white. Fore wing with white lines along median nervure and discocellulars, enclosing a space at end of cell; a straight line thence to inner margin; the costal fascia not extending to the apex and connected by two white lines to a whitish patch, with three dark specks on it, on the outer margin; an indistinct line from the patch to outer angle. Hind wing with a ring-mark at end of cell; a medial line excurved round end of cell; a submarginal line.

Hab. Dalhousie; Sikhim. *Exp.* 24 millim.

2140. **Zagira multiguttata,** *Moore, Lep. Ceyl.* iii, p. 210, pl. 174, fig. 8; *C. & S.* no. 2808.

Bright red-brown; head and collar deep chestnut; a white line behind the collar; abdomen with white specks. Fore wing with traces of antemedial and postmedial waved lines with minute white specks on them; a white spot at centre of cell and larger spot at end of it; submarginal and marginal series of white specks; a white spot at apex and two subapical spots. Hind wing with a few white specks on the basal area and very numerous spots on the outer half.

Hab. Nágas; Ceylon. *Exp.* 20 millim.

2141. **Zagira contentaria,** *Wlk. Cat.* xxii, p. 639.
Chusaris punctilinealis, *Wlk. Cat.* xxxiv, p. 1175; *Hmpsn. Ill. Het.* ix, pl. 167, fig. 27; *C. & S.* no. 2935.

Ochreous, suffused with rufous and irrorated with black; the frons white. Fore wing with black speck at base; an indistinct waved antemedial line; two white-ringed black specks at end of cell; a postmedial series of white specks incurved below end of cell. Hind wing with black speck in cell; curved postmedial series of white specks; both wings with marginal series of black specks.

Hab. Nilgiris; Ceylon; Borneo. *Exp.* 22 millim.

SECT. II. Palpi with the 3rd joint minute; fore wing with vein 10 given off after the areole.

2142. **Zagira acidaliaria**, *Wlk. Cat.* xxxv, p. 1638.
Gyrognatha atriceps, *Hmpsn. Ill. Het.* ix, p. 134, pl. 168, fig. 10.

♂. Differs from *punctilinealis* in being pinkish brown; the head black. Hind wing with two black specks at end of cell; an ochreous patch on postmedial line at inner margin.

Hab. Ceylon; Borneo. *Exp.* 24 millim.

Genus CORGATHA.

Corgatha, *Wlk. Cat.* xvi, p. 215 (1858).
Zitna, *Wlk. Cat.* xxxiv, p. 1276 (1865).

Type, *C. zonalis*, Wlk.

Range. Japan; Sikhim; Manipur; Nilgiris; Ceylon; Borneo.

Differs from *Zagira* in the palpi being porrect; the 2nd joint triangularly scaled, the 3rd minute; abdomen not tufted.

SECT. I. The outer margin of fore wing not excised below apex nor angled at centre, of hind wing not angled at centre.

2143. **Corgatha rubra**, *Hmpsn. Ill. Het.* viii, p. 92, pl. 147, fig. 16.

Brick-red; head with a whitish band between the base of antennæ. Fore wing with the costa blackish, white at apex; a black speck at end of cell; a pale postmedial line slightly curved below the costa; a marginal series of black specks. Hind wing with black speck at end of cell; a pale straight medial line; a marginal series of black specks. Underside whitish.

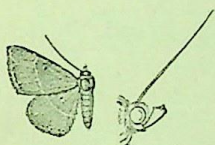



Fig. 185.
Corgatha rubra, ♂. 1/1.

Hab. Nilgiris. *Exp.* 24 millim.

2144. **Corgatha zonalis**, *Wlk. Cat.* xvi, p. 216; *Hmpsn. Ill. Het.* ix, pl. 167, fig. 16; *C. & S.* no. 2934.

♀. Differs from *rubra* in being paler; an oblique antemedial pale line; the postmedial line more curved and less angled below costa. Hind wing with the line postmedial instead of medial.

Hab. Ceylon. *Exp.* 14 millim.

2145. **Corgatha costinotalis**, *Moore, P. Z. S.* 1867, p. 83; *C. & S.* no. 2870.
Capnodes minor, *Moore, Lep. Ceyl.* iii, p. 212, pl. 174, fig. 11; *C. & S.* no. 2779.

Brick-red. Fore wing with subbasal, ante- and postmedial white spots on the costa with dark edges; traces of antemedial, medial, and postmedial waved dark lines; a marginal series of black specks. Hind wing with ante- and postmedial indistinct waved lines. Underside pale, with indistinct cell-spot and postmedial line to both wings.

Hab. Sikhim. *Exp.* 24 millim.

SECT. II. Fore wing with the outer margin excised below apex and angled at centre.

A. *Hind wing with outer margin slightly angled at centre.*

2146. **Corgatha excisa**, n. sp.

♂. Red-brown, suffused with grey. Fore wing with the veins grey; an antemedial pale line angled below the costa; a dark spot at end of cell; a postmedial pale line excurved beyond cell; an indistinct irregularly sinuous submarginal line and almost marginal series of dark specks. Hind wing with the veins grey; a straight postmedial pale line, sinuous submarginal and almost marginal series of dark specks. Underside with the disk of fore wing red.

Hab. Mao, Manipur (*Doherty*). *Exp.* 22 millim. Type in coll. Elwes.

B. *Hind wing with outer margin highly angled at centre.*

2147. **Corgatha falcatalis**, n. sp.

♀. Dark red-brown. Fore wing with traces of an antemedial dark line; a diffused oblique medial line; a postmedial waved line excurved beyond cell; a dark patch at apex and another at outer angle. Hind wing with indistinct waved antemedial and medial lines; the apical area suffused with black.

Hab. Sikhim (*Möller*). *Exp.* 22 millim. Type in coll. Elwes.

Genus **ORUZA**.

Oruza, *Wlk. Cat.* xxiv, p. 1089 (1862).
Arasada, *Moore, Lep. Ceyl.* iii, p. 188 (1884).

Type, *O. costata*, Wlk.

Range. Sikhim; Calcutta; Ceylon; Burma; Java.

Palpi upturned, reaching vertex of head, the 2nd joint hairy in front, the 3rd minute; antennæ of male ciliated and with bristles at the joints; thorax and abdomen slightly scaled. Fore legs with the femora and tibiæ hairy; hind legs of male with the tibiæ and tarsi fringed with hair on the outer side, the spurs very long and fringed with short scales; hind legs with the tibiæ and tarsi fringed with long hair on both sides and the spurs with scales. Fore wing rather elongate, the apex rounded; vein 8 anastomosing with 9 and 10 to form the areole. Hind wing with veins 3 and 4 stalked.

Larvæ with two pairs of abdominal prolegs.

2148. **Oruza pyraliformis**, *Moore, Lep. Ceyl.* iii, p. 189, pl. 172, figs. 1, 1 *a* (larva); *C. & S.* no. 2328.

♂. Brownish ochreous; head and collar brown. Wings irrorated with black scales; fore wing with the costa whitish and with three dark specks towards apex; dentate ante- and postmedial

indistinct dark lines, the latter oblique; two dark specks at end of cell; a series of submarginal dentate dark spots and three black subapical spots; a marginal series of black specks. Hind wing similar, but without the antemedial line; the postmedial line with ochreous outer edge.

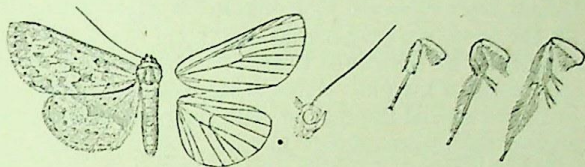



Fig. 186.—*Oruza pyraliformis*, ♂. ½.

Larva with the head large and produced upwards; colour green with a dorsal yellowish band, lateral streaks and the stigmata yellow; head and sides of thoracic somites black speckled; 1st somite with lateral purple-brown streaks; a blackish line between 4th and 5th somites; some blackish lateral marks on terminal somites. Pupates in a rolled-up portion of leaf.

Hab. Ceylon; Java. *Exp.* 38 millim.

*2149. **Oruza ruptifascia**, *Moore, Lep. Atk.* p. 290.

Pale pinkish brown; the head brown. Fore wing with indistinct oblique antemedial line; a spot at end of cell; an oblique slightly curved postmedial line; traces of a submarginal line with two black-brown spots on it below costa. Hind wing with traces of an antemedial line; a dark speck at end of cell; a double postmedial dark line filled in with white; two submarginal fuscous blotches, one near apex, the other towards inner margin; both wings with marginal series of black specks.

Hab. Calcutta. *Exp.* 24 millim.

*2150. **Oruza fratercula**, *Moore, Lep. Atk.* p. 290.

Pale red-brown. Fore wing with small ring-spot at lower angle of cell; indistinct slightly curved postmedial line and two almost straight submarginal lines, the outer obsolete towards costa. Hind wing with speck at end of cell and three indistinct slightly curved lines on outer area; both wings with marginal series of dark specks.

Hab. Calcutta. *Exp.* 24 millim.

2151. **Oruza albicosta**, n. sp.

♀. Differs from *pyraliformis* in being reddish ochreous brown; a white line behind the collar and white fascia on costa of fore wing; the ante- and postmedial lines yellow and waved; a white black-ringed speck at lower angle of cell; an irregular submarginal series of yellow spots with a black spot towards outer angle

instead of the dentate marks. Hind wing with the two black specks at end of cell prominent; the medial line nearly straight and edged by disconnected white marks.

Hab. Burma. *Exp.* 28 millim. Type in B. M.

2152. **Oruza fasciosa,** *Moore, Lep. Atk.* p. 290, pl. viii, fig. 21.

♀. Differs from *albicosta* in being much more orange. Fore wing with the costa narrowly white; the cell suffused with fuscous; the lines replaced by ill-defined bands; a dark oblique band from below apex to inner margin. Hind wing with one black speck at end of cell; the medial line yellow with dark suffusion inside it; two indistinct dark lines on outer area.

Hab. Sikhim. *Exp.* 36 millim.

2153. **Oruza anisodoides,** n. sp.

♀. Ochreous yellow; head, collar, and fore femora and tibiæ black; a red line across the thorax; abdomen irrorated with black, the terminal segments with pale rings. Fore wing with greyish costal fascia; double ante- and postmedial and single submarginal and almost marginal waved reddish lines; a white black-ringed spot at end of cell; a marginal series of black specks. Hind wing with a black speck at end of cell; a straight medial oblique black line with white outer edge; indistinct postmedial and submarginal lunulate lines; a series of marginal black specks.

Hab. Ceylon (*Green*). *Exp.* 30 millim. Type in B. M.

2154. **Oruza lycaugesaria,** *Swinh. Trans. Ent. Soc.* 1890, p. 232.

♀. Differs from *anisodoides* in being whiter. Fore wing with a dark vinous streak below the costa towards apex; an oblique streak across outer angle; no ring-spot at end of cell. Hind wing much suffused with pink and purplish fuscous; some yellow beyond the white of the medial band; a dark oblique streak below the apex.

Hab. Rangoon. *Exp.* 26 millim.

2155. **Oruza costata,** *Wlk. Cat.* xxiv, p. 1089; *C. & S.* no. 3688.

♀. Deep ferruginous red. Fore wing with an ochreous costal fascia and some fuscous below it; oblique ante- and postmedial ochreous lines with fuscous inner edges; a finer submarginal line oblique from the costa to vein 4, then dentate to inner margin. Hind wing with an ochreous line on the discocellulars; a nearly straight medial line and submarginal line similar to that on fore wing; the veins of both wings pale.

Hab. "India." *Exp.* 26 millim.

2156. **Oruza pallescens,** n. sp.

♀. Brownish ochreous; head fuscous. Fore wing with a dark subcostal fascia, a black and white speck at lower angle of cell; an oblique line from lower angle to inner margin; an oblique band

from outer margin below apex to inner margin, with a black speck above it and speck beyond it at outer angle. Hind wing with oblique medial diffused fuscous band and line just beyond its outer edge; a fuscous submarginal band with series of dark specks beyond it.

Hab. Calcutta. *Exp.* 23 millim. Type in B. M.

Genus **PSEUDACIDALIA**, nov.

Type, *P. albicosta*, Moore.

Range. Ceylon; Burma.

♀. Palpi long, naked, and slender, the 2nd joint reaching above vertex of head, the 3rd long; antennæ minutely ciliated; thorax and abdomen smoothly scaled; tibiæ not hairy. Fore wing broad, the apex nearly rectangular; veins 7, 8, 9, 10 stalked. Hind wing with vein 5 from below centre of discocellulars.

2157. **Pseudacidalia albicosta,** *Moore, Lep. Ceyl.* iii, p. 232; *C. & S.* no. 3039.

♀. Red-brown; the head dark; collar fringed with white. Fore wing with the costa white. a dark speck at lower angle of cell; an indistinct oblique postmedial line; traces of a waved submarginal line; a marginal series of dark specks. Hind wing with a medial pale line.

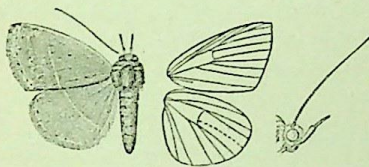



Fig. 187.—*Pseudacidalia albicosta*, ♀. ½.

Hab. Ceylon. *Exp.* 34 millim.

2158. **Pseudacidalia undulata,** n. sp.

♀. Differs from *albicosta* in being rather paler brown. Fore wing with traces of a waved antemedial line; the postmedial line waved; a dark speck at middle of cell. Hind wing with indistinct waved ante- and postmedial pale lines.

Hab. E. Pegu (*Doherty*). *Exp.* 28 millim. Type in coll. Elwes.

Genus **MICRÆSCHUS.**

Micræschus, *Butl. Ann. M. N. H.* (5) i, p. 402 (1878).

Type, *M. elatarius*, Wlk.

Range. Ceylon; Assam Hills; Burma.

Palpi very slender and obliquely upturned, reaching vertex of head; antennæ with fasciculated cilia in male; thorax and abdomen without tufts; legs naked, with the spurs normal. Fore wing with veins 7, 8, 9, 10 stalked. Hind wing with veins 3 and 4 stalked.

Larvæ with two pairs of abdominal prolegs.

Sect. I. Fore wing with the outer margin slightly angled at vein 8.

2159. **Micræschus elatarius**, *Wlk. Cat.* xxii, p. 665; *C. & S.* no. 3965.

Pale yellow, speckled with crimson; the head and collar chestnut. Fore wing with the costa greyish and with a dark fascia below it to end of cell, then bent downwards to the outer margin at vein 3; the costa and fascia irrorated with metallic scales; indistinct antemedial, medial, and postmedial waved crimson lines; a submarginal irregular series of white spots on the apical area. Hind wing with traces of medial and postmedial crimson lines; a white spot at end of cell; some white submarginal spots on apical area; both wings with dark marginal line irrorated with metallic scales, the cilia orange.

Hab. Ceylon. *Exp.* 12 millim.

2160. **Micræschus rosellus**, *Hmpsn. Ill. Het.* ix, p. 126, pl. 170, fig. 17.

♂. Differs from *elatarius* in the dark margins, and also in the costal streak and fascia of fore wing being much narrower; the submarginal white spots of both wings very large, with a large additional spot on each wing towards inner margin.

Hab. Ceylon. *Exp.* 14 millim.

Sect. II. Fore wing with the outer margin evenly rounded.

2161. **Micræschus oblatarius**, *Wlk. Cat.* xxii, p. 665; *Moore, Lep. Ceyl.* iii, pl. 200, fig. 6; *Hmpsn. Ill. Het.* ix, pl. 176, fig. 17 (larva); *C. & S.* no. 3966.

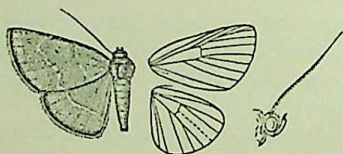



Fig. 188.
Micræschus oblatarius, ♂. $\frac{2}{1}$.

♂. Bright brick-red; the vertex of head white. Fore wing irrorated with dark specks; the costa dark, with white specks on it; very indistinct ante- and postmedial pale lines, sometimes speckled with black, and with a black blotch between them on inner margin; a dark speck at end of cell. Hind wing with a speck at end of cell; pale ante- and postmedial lines; a dark marginal line irrorated with metallic scales to both wings.

♀. Fore wing with the basal and outer areas paler than the medial, and a distinct dentate submarginal line.

Larva smooth and cylindrical, covered with comminuted lichen arranged in tufts on certain somites. Cocoon covered with lichen and suspended by a cable of silk.

Hab. Ceylon. *Exp.*, ♂ 16, ♀ 20 millim.

2162. **Micræschus regulatus,** *Wlk. Cat.* xxiii, p. 794; *C. & S.* no. 3946.

Differs from *oblatarius* in having an oblique diffused sub-basal line to the fore wing; a black spot at end of cell; the postmedial line of both wings whiter and more regular; no dark costal and marginal lines irrorated with metallic scales.
Hab. Moulmein. *Exp.* 16 millim.

2163. **Micræschus minutus,** *Hmpsn. Ill. Het.* ix, p. 150, pl. 169, fig. 18.

♂. Red-brown; frons chestnut; shaft of antennæ and a band between their bases white. Fore wing with two oblique dark medial lines from the costa to cell; some specks towards apex. Hind wing with a rufous band on discocellulars; an irregularly waved postmedial ochreous line.
Hab. Ceylon. *Exp.* 14 millim.

2164. **Micræschus roseus,** *Hmpsn. Ill. Het.* ix, p. 150, pl. 169, fig. 3.

♀. Bright pink; the vertex of head white; both wings with traces of a dark speck at end of cell and irregular postmedial line; a dark marginal line; the cilia bright yellow.
Hab. Ceylon. *Exp.* 20 millim.

2165. **Micræschus ustipennis,** n. sp.

♀. Brick-red; the vertex of head white. Fore wing with dark ante- and postmedial lines, the latter excurved beyond cell; a dark spot at end of cell; the costa and outer margin dark. Hind wing with dark ante- and postmedial lines; the outer margin dark.
Hab. Nágas (*Doherty*). *Exp.* 20 millim. Type in coll. Elwes.

2166. **Micræschus gemmifer,** n. sp.

♂. Dull brown, irrorated with black. Fore wing with the costa black, irrorated with a few metallic scales; dark spots in and at end of cell; a black submarginal line with a series of metallic blue spots on it and a dark subapical spot. Hind wing with traces of ante- and postmedial waved lines; a black submarginal line with a series of metallic blue spots on it.
Hab. E. Pegu (*Doherty*). *Exp.* 16 millim. Type in coll. Elwes.

Subfamily PALINDIINÆ.

Palpi slender and closely appressed to the frons. Scaling very smooth and shining. Fore wings with veins 8 and 9 almost always forming an areole. Hind wing with vein 5 fully developed and usually from or from near lower angle of cell, rarely from near centre of discocellulars.

Larvæ with four pairs of abdominal prolegs and not semi-looping.

Key to the Genera.

A. Hind wing with vein 5 from near lower angle of cell or well below centre of discocellulars.
  a. Fore wing with the inner margin not arched.
    a'. Fore wing with the outer margin slightly angled from vein 5 to outer angle .... 3. RAMADASA, p. 357.
    b'. Fore wing with the outer margin evenly rounded.
      a^2. Abdomen without dorsal tufts.
        a^3. Fore wing with the inner margin curved, the apex rectangular .... 4. WESTERMANNIA, p. 358.
        b^3. Fore wing with the inner margin nearly straight.
          a^4. Fore wing with the apex rounded .... 2. CALLYNA, p. 355.
          b^4. Fore wing with the apex rectangular.............. 7. BREVIPECTEN, p. 361.
      b^2. Abdomen with dorsal tufts.
        c^3. Palpi reaching above vertex of head; abdomen with a series of tufts .... 1. DINUMMA, p. 354.
        d^3. Palpi hardly reaching vertex of head; abdomen with one dorsal tuft .... 6. BRYOPHILOPSIS, p. 361.
  b. Fore wing with the inner margin much arched.
    c'. Fore wing with the outer margin angled, veins 8 and 9 anastomosing to form an areole .... 9. PTEROGONIA, p. 362.
    d'. Fore wing with the outer margin rounded.
      c^2. Fore wing with veins 8, 9, 10 stalked .... 8. DORANAGA, p. 362.
      d^2. Fore wing with veins 8 and 9 anastomosing to form an areole.... 5. NAGASENA, p. 360.
B. Hind wing with vein 5 from centre of discocellulars; fore wing with raised bosses of metallic scales ....10. HOMODES, p. 364.

Genus DINUMMA.

Dinumma, *Wlk. Cat.* xv, p. 1805 (1858).

Type, *D. placens*, Wlk.

Range. Japan; China; N.W. Himalayas; Nilgiris; Ceylon; Burma; Java.

Palpi smoothly scaled and upturned; the 2nd joint reaching just above vertex of head, the 3rd of moderate length. Antennæ minutely ciliated. Thorax smoothly scaled. Abdomen with a series of dorsal tufts. Tibiæ moderately hairy. Fore wing of

nearly even width throughout, the apex and outer margin rounded. Hind wing with vein 5 from lower angle of cell.

2167. **Dinumma placens**, *Wlk. Cat.* xv, p. 1806; *Moore, Lep. Ceyl* iii, pl. 156, fig. 11; *C. & S.* no. 2396.
Dinumma varians, *Butl. Ill. Het.* vii, p. 73, pl. 131, figs. 9, 10.

♂. Head and thorax purplish black; abdomen fuscous, with the dorsal tufts black. Fore wing red-brown suffused with purplish black; a black basal patch; waved ante- and postmedial lines, the latter angled beyond cell, the area between them black, with a deeper black spot at end of cell; a subapical black and whitish spot on outer margin, with fine blue streaks across it; a similar spot, but with no whitish, above outer angle. Hind wing fuscous.

♀ with the antemedial and outer areas of fore wing redder.

Hab. Dharmsála; Nilgiris; Ceylon; Rangoon. *Exp.* 26-34 millim.

2168. **Dinumma deponens**, *Wlk. Cat.* xv, p. 1806; *C. & S.* no. 2394.
Dichonia bipunctata, *Motsch. Et. Ent.* 1860, p. 32.
Dinumma largeteaui, *Oberth. Et. Ent.* x, p. 28, pl. 11, fig. 7.

Differs from *placens* in the antemedial and outer areas of the fore wing being purplish red-brown in both sexes; the basal patch and medial band deep black, the latter with the inner edge

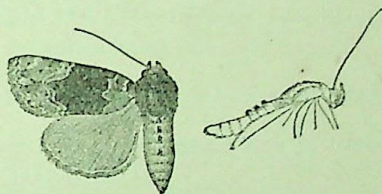



Fig. 189.—*Dinumma deponens*, ♂. ¼.

more sinuous, the outer more irregular, and with a purplish line beyond it; black patches on outer margin below apex and at centre without blue lines on them.

Hab. Japan; China; Dharmsála. *Exp.* 40 millim.

Genus CALLYNA.

Callyna, *Guen. Noct.* i, p. 112 (1852).
? Calymera, *Moore, Lep. Atk.* p. 104 (1882).

Type, *C. siderea*, Guen.

Range. S. Africa; Japan; throughout India, Ceylon, and Burma; Andamans.

Palpi slender and closely appressed to frons, the 3rd joint reaching just above vertex of head. Antennæ of male minutely ciliated;

thorax and abdomen smoothly scaled. Fore wing of nearly even breadth throughout; the apex and outer margin rounded. Hind wing with vein 5 from below centre of discocellulars.

169. **Callyna siderea**, *Guen. Noct.* i, p. 113; *C. & S.* no. 2393.

Head, thorax, and abdomen black, the last with the terminal segments orange; the legs marked with orange. Fore wing shining black; two orange specks near base and two on costa before middle, the outer with a black line from it to vein 1; the orbicular and reniform large, with black outlines and centres; the claviform black, with a line through it; a white postmedial spot on costa, with a curved line from it to inner margin, with some white specks beyond it; some white specks on costa towards apex; an apical white patch, tinged with yellow; a submarginal series of white specks and marginal series of orange specks. Hind wing fuscous black, with the apex white.

Hab. Dharmsála; Sylhet; Poona. *Exp.* 34–42 millim.

2170. **Callyna monoleuca**, *Wlk. Cat.* xv, p. 1667; *C. & S.* no. 2391.

Head, thorax, and fore wing deep chocolate; the last with five indistinct waved lines, the postmedial line excurved round cell; some white specks on costa; a white yellow-tinged apical spot. Abdomen and hind wing fuscous, with a cupreous tinge. Underside with curved postmedial line to both wings.

Hab. Sikhim; Assam; Canara; Nilgiris; Ceylon. *Exp.* 42–50 millim.

2171. **Callyna jugaria**, *Wlk. Cat.* xv, p. 1809; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 20; *C. & S.* no. 2390.
Callyna semivitta, *Moore, Lep. Atk.* p. 161; *C. & S.* no. 2392.

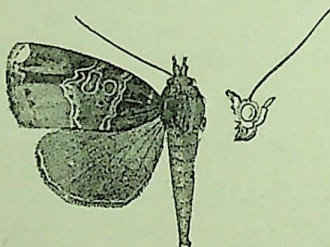



Fig. 190.—*Callyna jugaria*, ♂. ½.

Head and thorax purplish red-brown; in some specimens the head is greyish and the collar black-brown; abdomen fuscous. Fore wing deep chestnut-red; the inner area and a subapical streak purplish grey; a short subbasal ochreous or grey double line; a broad medial ochreous or grey-speckled band, more or less obsolete towards inner margin, bounded by waved ante- and postmedial lines, the latter angled beyond the cell, and with the orbicular and reniform spots on it large and often white-edged; an apical white patch; a sinuous submarginal line. Hind wing fuscous, with the cilia whitish below apex.

Hab. Throughout India and Ceylon; Andamans. *Exp.* 48–68 millim.

2172. **Callyna mystica**, *Wlk. Cat.* xv, p. 1807; *C. & S.* no. 2395.

Differs from *jugaria* in being duller chestnut-red. Fore wing with the basal costal area reddish ochreous; no pale suffusion on medial band below the cell; the orbicular and reniform stigmata minute; the postmedial line straight from the costa to angle beyond cell. Hind wing without the white patch on cilia. Underside without the apical white patch to fore wing.

Hab. Moulmein. *Exp.* 40 millim.

2173. **Callyna costiplaga**, *Moore, Lep. Ceyl.* iii, p. 100, pl. 156, fig. 10; *C. & S.* no. 2389.

Head dark red-brown; collar black; thorax and abdomen brown. Fore wing brown with indistinct subbasal, antemedial, postmedial, and submarginal waved lines; large quadrate black costal patches between the two former and the two latter; the orbicular and reniform indistinct. Hind wing dark fuscous; the cilia ochreous.

Hab. Bombay; Nilgiris; Ceylon. *Exp.* 46 millim.

*2174. **Callyna? picta**, *Moore, Lep. Atk.* p. 104, pl. iv, fig. 7; *C. & S.* no. 1787.

♀. Head and thorax pale fuscous, with darker spots; abdomen pale fuscous. Fore wing pale brownish ochreous; a dark spot at base and two medial lines from cell to inner margin; a large chestnut postmedial patch from costa to near inner margin, its lower part suffused with purple, and with a whitish lunule on the discocellulars, a brown line on its outer edge, bent outwards to the outer angle; a marginal series of fuscous spots. Hind wing dark fuscous.

Hab. Sikhim. *Exp.* 40 millim.

Genus RAMADASA.

Ramadasa, *Moore, P. Z. S.* 1877, p. 603.
Baorisa, *Moore, Lep. Atk.* p. 133 (1882).

Type, *R. pavo*, Wlk.

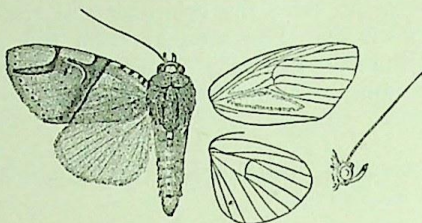
Range. Sikhim; Ceylon; Andamans.

Palpi naked and upturned, flattened and reaching vertex of head, the 3rd joint minute; antennæ simple; thorax and abdomen smoothly scaled; tibiæ without spines and slightly clothed with hair. Fore wing with the outer margin oblique from vein 5 to outer angle; veins 8 and 9 anastomosing to form an areole.

SECT. I. (*Ramadasa*). Fore wing of male with veins 3, 4, 5 curved at their bases; the membrane in the cell and interno-median interspace slightly ridged, probably for stridulation.

2175. **Ramadasa pavo**, *Wlk. Cat.* ix, p. 147; *Moore, Lep. Ceyl.* iii, pl. 149, fig. 1; *C. & S.* no. 1784.

Head and thorax clothed with grey brown-mottled scales; the

frons barred with orange and metallic blue-black; the abdomen orange. Fore wing with the basal area grey, mottled with brown; the costa orange, with five blue-black spots; an oblique medial

[Fig. 191.—*Ramadasa pavo*, ♂. ⅟.

black line with vinous suffusion on its outer edge; the outer area pale chestnut; the reniform large and incomplete, outlined on its upper and inner sides by black and violet, the upper part of its outer edge by a black line, terminating in a red speck with two black specks below it; a black striga from the costa to the reniform, and a blue-black band beyond it from the costa to vein 6, where it is bent outwards to the margin as a streak; a series of black and white submarginal specks. Hind wing orange.

Hab. Sikhim; Ceylon; Andamans. *Exp.*, ♂ 45, ♀ 50 millim.

SECT. II. (*Baorisa*). Fore wing of male without the ridged membrane and distortion of nervules.

2176. **Ramadasa hieroglyphica**, *Moore, Lep. Atk.* p. 133, pl. iv, fig. 14; *C. & S.* no. 1788.

Pure white. Frons with a black bar; thorax with a few black specks. Fore wing with five metallic blue-black strigæ from the basal half of costa, increasing in length outwardly; a diffused yellow fascia on median nervure; two metallic specks below the cell; a postmedial metallic mark from the costa shaped like the letter **A** and followed by a **V**-shaped mark; a submarginal line, terminating in three radiating lines, which end in a brown and crimson blotch near the middle of outer margin, with four white specks on it and two metallic lines below it. Legs and underside of abdomen spotted with metallic blue-black.

Hab. Sikhim. *Exp.* 50 millim.

Genus WESTERMANNIA.

Westermannia, *Hübn. Zutr.* ii, 23 (1823).
Plusiodes, *Guen. Noct.* ii, p. 385 (1852).

Type, *W. superba*, Hübn.

Range. Western and Southern India; Ceylon; Assam; Andamans; Java; Australia.

Palpi slender and closely appressed to the frons; the 3rd joint naked and reaching just above vertex of head; antennæ of male almost simple; thorax and abdomen smoothly scaled; tibiæ not hairy and without spines. Fore wing with the apex nearly rectangular. Hind wing with vein 5 from below centre of discocellulars.

2177. **Westermannia superba,** *Hübn. Zutr. Samml. exot. Schmett.* p. 23, figs. 323, 324; *Moore, Lep. Ceyl.* iii, pl. 154, figs. 1, 1 *a* (larva); *C. & S.* no. 2150.

Plusiodes westermannii, *Guen. Noct.* ii, p. 386.

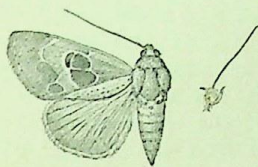



Fig. 192.—*Westermannia superba*, ♂. 1/1.

Head pure white; thorax and abdomen yellowish white. Fore wing pale silvery brown; the basal costal area and a broad postmedial curved band white, these two white areas being conjoined at costa, and by the discocellulars and median nervure being white. Hind wing pale, suffused with fuscous towards outer margin.

Larva. Pale olive-green, thickly spotted with yellow; a yellow dorsal line on each segment; genæ with a small red streak. Food-plant, *Terminalia.*

Hab. W. and S. India; Ceylon; Java. *Exp.* 36 millim.

2178. **Westermannia argentea,** *Hmpsn. Ill. Het.* viii, p. 80, pl. 146, fig. 19.

Differs from *superba* in the tegulæ and metathorax being white. Fore wing bright silvery grey, with a broad white fascia on inner basal area; the disk tinged with gold. Hind wing opalescent white, fuscous towards outer margin.

Hab. Nilgiris. *Exp.* 50 millim.

2179. **Westermannia triangularis,** *Moore, P. Z. S.* 1877, p. 605; *C. & S.* no. 2151.

Head and thorax white; abdomen fuscous. Fore wing white, with a medial fuscous band from median nervure to inner margin, with a diffused fuscous streak from it to base along median nervure; the outer area coppery brown, with the margin blue-grey. Hind wing white, fuscous towards outer margin.

Hab. Assam; Andamans. *Exp.* 36 millim.

2180. **Westermannia cornucopia,** *Hmpsn. Ill. Het.* viii, p. 61, pl. 141, fig. 12.

♀. Pale brown; head and thorax with black tips to the scales. Fore wing with a large chocolate cornucopia-shaped mark from the outer margin to centre of inner margin, some white on its inner edge, two fine silvery lines on the discocellulars, and a fine

silvery sinuous line beyond the cell, with silvery suffusion between it and the discocellulars; traces of a curved submarginal line. Hind wing fuscous.

Hab. Nilgiris. *Exp.* 34 millim.

Genus NAGASENA.

Nagasena, *Moore, Lep. Atk.* p. 151 (1882).

Type, *N. albescens,* Moore.

Range. Sikhim; Assam; Ceylon; Andamans.

Palpi slender and naked, the 3rd joint reaching above vertex of head; antennæ with long cilia in male; thorax and abdomen smoothly scaled, except for a slight tuft on 1st segment of latter; tibiæ moderately hairy. Fore wing with the apex somewhat rounded; the inner margin lobed near base; the retinaculum bar-shaped in male. Hind wing with vein 5 from lower angle of cell.

2181. **Nagasena albescens,** *Moore, Lep. Atk.* p. 152; *C. & S.* no. 2152.

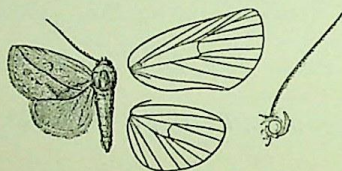



Fig. 193.
Nagasena albescens, ♂. 1/1.

Head and collar white; thorax and abdomen brownish. Fore wing whitish, suffused and irrorated with brown; a minute rufous speck at upper angle of cell; a curved rufous line from apex to inner margin near base; traces of a submarginal series of specks. Hind wing pale, suffused with fuscous.

Hab. Sikhim; Margharita, Assam. *Exp.* 30 millim.

2182. **Nagasena dentilinealis,** *Moore, P. Z. S.* 1877, p. 613, pl. 60, fig. 7; *C. & S.* no. 2871.

♂. Differs from *albescens* in being whiter; a dark speck at end of cell of fore wing; the line from apex brown, waved, and reaching centre of inner margin. Hind wing fuscous.

Hab. Andamans. *Exp.* 28 millim.

2183. **Nagasena trapezata,** *Moore, Lep. Ceyl.* iii, p. 547.

♀. Pale brownish ochreous. Fore wing with very oblique antemedial brown line; an obliquely curved medial line, sending a streak from end of cell to outer margin below apex, crossing an angulated submarginal line. Hind wing semihyaline, slightly suffused with fuscous towards outer margin.

Hab. Ceylon. *Exp.* 34 millim.

Genus **BRYOPHILOPSIS**, nov.

Type, *B. griseata*, Hmpsn.

Range. N.W. Himalayas.

Palpi slight and reaching vertex of head; antennæ with long cilia in male; metathorax slightly tufted; abdomen with a dorsal tuft on 2nd segment; tibiæ nearly naked. Fore wing with the outer margin obliquely rounded; veins 8 and 9 anastomosing to form an areole. Hind wing with vein 5 from lower angle of cell.

2184. **Bryophilopsis griseata**, n. sp.

Head and thorax grey; abdomen pale. Fore wing grey; an antemedial oblique slightly-waved line joined by a streak below vein 2 to a postmedial line, which is bent outwards below costa; the reniform large and indistinct; the area inside and below it, between the streak and ante- and postmedial lines, often black; a sinuous submarginal line angled outwards to margin below the centre. Hind wing pale fuscous.

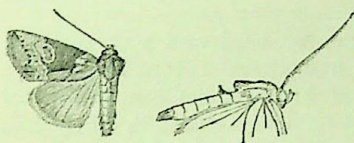



Fig. 194.
Bryophilopsis griseata, ♂. ½.

Hab. Simla (*Harford*). *Exp.* 26 millim. Type in B. M.

Genus **BREVIPECTEN**, nov.

Type, *B. captatus*, Butl.

Range. W. and S. Africa; China; N.W. Himalayas; Nilgiris; Ceylon.

Palpi slight and reaching vertex of head; antennæ of male bipectinated to three-fourths length, the branches long; thorax and abdomen smoothly scaled; tibiæ with slight tufts of hair on the outer side. Fore wing with the apex rectangular; the inner margin nearly straight after the basal lobe; veins 8 and 9 anastomosing to form an areole. Hind wing with vein 5 from above angle of cell.

2185. **Brevipecten captatus**, *Butl. Ill. Het.* vii, p. 79, pl. 133, fig. 1.

Brownish grey. Fore wing with short subbasal line; an antemedial oblique line; a large triangular medial deep chocolate patch with white edges extending to lower angle of cell, with a sinuous line from it to inner margin where it joins the highly excurved postmedial line, which has a triangular chocolate patch with white edges on the costa beyond it. Some specimens have three dark specks beyond lower angle of cell. Hind wing fuscous brown.

Fig. 195.—*Brevipecten captatus*, ♂. ½.

Hab. China; N.W. Himalayas; Nilgiris. *Exp.* 32 millim.

2186. **Brevipecten lunifer**, *Hmpsn. Ill. Het.* ix, p. 113, pl. 160, fig. 13.

♂. Differs from *captata* in the lines of the fore wing being less distinct; a large whitish reniform mark, obliterating the greater part of the triangular medial patch; the apex of the triangular patch before apex truncate. Hind wing ochreous.

Hab. Trincomali, Ceylon. *Exp.* 24 millim.

Genus DORANAGA.

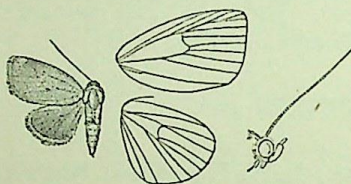
Doranaga, *Moore, Lep. Ceyl.* iii, p. 553 (1884).

Type, *D. leucospila*, Wlk.

Range. Khásis; Nágas; Nilgiris; Ceylon; Singapore; Borneo; Mysol; Gilolo.

Palpi reaching just above vertex of head and very slender; thorax smoothly scaled; abdomen with dorsal tuft at base; tibiæ not hairy. Fore wing short and broad, the costa and inner margin arched; the outer margin angled; veins 8, 9, 10 stalked. Hind wing with vein 5 from near lower angle of cell.

2187. **Doranaga straminea**, *Hmpsn. Ill. Het.* viii, p. 92, pl. 147, fig. 17.

Fig. 196.—*Doranaga straminea*, ♂. ½.

♀. Ochreous and of glossy texture; palpi black at sides; vertex of head black. Fore wing with the apical area slightly suffused with fuscous, except the apex itself. Hind wing suffused with fuscous; the cilia ochreous.

Hab. Nilgiris. *Exp.* 24 millim.

2188. **Doranaga leucospila**, *Wlk. Cat.* xxxiii, p. 788.
Doranaga apicalis, *Moore, Lep. Ceyl.* iii, p. 553, pl. 214, fig. 7.

♀. Ochreous red-brown. Fore wing with traces of sinuous antemedial line; a creamy-white triangular patch on the costa before apex; an oblique rufous and ochreous line from apex to centre of inner margin; an indistinct lunulate fuscous submarginal line. Hind wing fuscous; the cilia ochreous; underside with narrow curved medial fuscous band and traces of submarginal band.

A specimen from the Khásis has the white patch almost obsolete.

Hab. Khásis; Nágas; Nilgiris; Ceylon; Singapore; Borneo; Mysol; Gilolo. *Exp.* 26 millim.

Genus PTEROGONIA.

Pterogonia, *Swinh. Trans. Ent. Soc.* 1891, p. 152.
Craspedagonia, *Hmpsn. Ill. Het.* ix, p. 117 (1893).

Type, *P. episcopalis*, Swinh.

Range. Nágas; Nilgiris; Ceylon; Borneo.

Differs from *Doranaga* in the palpi being obliquely upturned and reaching above a sharp frontal tuft. Fore wing with the costa straighter; the outer margin angled at vein 3; veins 8 and 9 anastomosing to form an areole; the retinaculum bar-shaped in male. Hind wing with vein 8 anastomosing with 7 to middle of cell; vein 5 from near lower angle of cell.

SECT. I. (*Pterogonia*). Fore wing with the outer margin not crenulate.

2189. **Pterogonia episcopalis**, *Swinh. Trans. Ent. Soc.* 1891, p. 152.

♂. Head, thorax, and fore wing grey, suffused with rosy and purplish hues, and slightly irrorated and striated with black. Fore wing with slight subbasal line; oblique sinuous antemedial line; a large silver mitre-shaped mark at end of cell, with bright ferru-

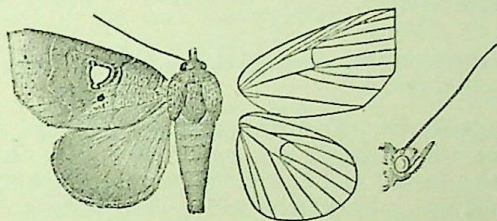



Fig. 197.—*Pterogonia episcopalis*, ♂. ½.

ginous outline; traces of a postmedial sinuous line; a submarginal series of black specks. Abdomen and hind wing pale fuscous, the latter with the outer area darkest.

The Nága specimen has the silvery stigma rounded and without ferruginous outline.

Hab. Nágas; Nilgiris; Borneo. *Exp.* 52 millim.

2190. **Pterogonia striatura**, *Moore, Lep. Ceyl.* iii, p. 553, pl. 214, fig. 11; *C. & S.* no. 2837.

♂. Ochreous, slightly irrorated and striated with black. Fore wing with traces of subbasal line; a highly curved indistinct antemedial line; a dark speck at each angle of cell; the base of vein 2 dark; a sinuous postmedial line; a submarginal series of black specks. Hind wing pale; the outer area fuscous.

Hab. Ceylon. *Exp.* 32 millim.

SECT. II. (*Craspedogonia*). Fore wing with the cilia crenulate, the outer margin more angled.

2191. **Pterogonia nubes**, *Hmpsn. Ill. Het.* ix, p. 117, pl. 166, fig. 3.

♀. Head, thorax, and fore wing red-brown, suffused with fuscous

and slightly irrorated with white; fore wing with traces of waved antemedial and medial lines; the disk and outer area suffused with fuscous. Abdomen and hind wing fuscous, the latter with the cilia white; underside with the outer area fuscous.

Hab. Ceylon. *Exp.* 40 millim.

Genus HOMODES.

Homodes, *Guen. Noct.* ii, p. 280 (1852).

Type, *H. crocea*, Guen.

Range. Bombay; Ceylon; Andamans; Java.

Palpi upturned and reaching vertex of head, the 3rd joint very minute; antennæ ciliated; thorax smoothly scaled. Abdomen with dorsal tufts on proximal segments; tibiæ nearly smooth; fore legs of male with a tuft of long hair from base of coxæ. Fore wing with the apex rounded. Hind wing with vein 5 from near centre of discocellulars.

2192. **Homodes crocea,** *Guen. Noct.* ii, p. 280, pl. xi, fig. 2; *C. & S.* no. 2189 (part.).

♂. Orange-scarlet. Fore wing with subbasal and antemedial waved lines with silvery scales on them; a boss of black and silvery scales in cell and two at end of it; an oblique medial fuscous band with silvery scales on it; an irregularly waved postmedial line, with indistinct line beyond it; a crimson submarginal

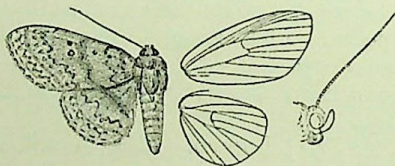



Fig. 198.—*Homodes crocea*, ♂. 1/1.

line, followed by a fuscous and silvery line; a marginal series of dark striæ. Hind wing with oblique fuscous and silvery medial band; irregularly waved postmedial line, followed by an indistinct line; a crimson submarginal line, with a fuscous and silvery one beyond it; a marginal series of dark striæ.

Hab. Andamans; Java. *Exp.* 38 millim.

2193. **Homodes vivida,** *Guen. Noct.* ii, p. 280; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 17; *C. & S.* no. 2189 (part.).

♂. Differs from *crocea* in the fore wing being without the bosses of scales at middle and end of cell; the postmedial line of both wings with a series of small raised bosses.

Hab. Bombay; Ceylon. *Exp.* 32 millim.

Subfamily SARROTHRIPINÆ.

Moths of small or moderate size; the fore wing with the costa and inner margin arched near base, then of nearly even width throughout, and almost always with raised buttons of scales in the cell or raised lines on the wings. The palpi either porrect and rostriform or upturned; legs with the tarsal joints short.

Larvæ with four pairs of abdominal prolegs, sparsely clothed with hair in the known species.

The subfamily is closely allied to the *Nolinæ*, and almost at the bottom of the Noctuid scale; the retinaculum is often bar-shaped in the male; and vein 8 of the hind wing often anastomoses with 7 to near middle of cell.

Key to the Genera.

A. Palpi obliquely porrect and slender; proboscis rudimentary .... 1. TRIORBIS, p. 366.
B. Proboscis fully developed.
  a. Palpi with the 3rd joint short and porrect .... 3. ARIOLA, p. 367.
  b. Palpi with the 3rd joint long and porrect.
    a'. Head extremely small; fore wing with vein 1 *a* long and curved .... 6. HYBLÆA, p. 371.
    b'. Head normal.
      a^2. Fore wing with the areole short.
        a^3. Fore wing with tufts of raised scales on the disk .... 5. PLOTHEIA, p. 368.
        b^3. Fore wing without tufts of raised scales on the disk .... 4. NOLASENA, p. 368.
      b^2. Fore wing with the areole long .. 7. ARACHNOGNATHA, [p. 373.
  c. Palpi with the third joint upturned.
    a'. Fore wing with an areole.
      a^2. Hind wing with vein 5 present.
        a^3. Thorax with no erect tuft behind the collar.
          a^4. Fore wing with the apex rounded, the areole short .. 12. CLETTHARINA, p. 379.
          b^4. Fore wing with the apex rectangular.
            a^5. Abdomen with dorsal tufts.
              a^6. Abdomen usually long; the antennæ long and ciliated in male ...... 8. LABANDA, p. 374.
              b^6. Abdomen and antennæ of normal length, the latter bipectinated in male .. 9. CHLUMETIA, p. 376.
            b^5. Abdomen without dorsal tufts.
              a^6. Fore wing with the areole short.
                a^7. Fore wing short and broad .... 10. BARASA, p. 376.
                b^7. Fore wing long and narrow .... 2. GADIRTHA, p. 367.

Genus **TRIORBIS**, nov.

Type, *T. annulata*, Swinh.
Range. Burma.

Proboscis rudimentary; palpi obliquely porrect, the 2nd joint reaching beyond the frons, naked at base, more thickly scaled distally, the 3rd joint of moderate length; antennæ of female simple and thickened; thorax and abdomen smoothly scaled; the tibiæ fringed with long hair. Fore wing with the apex rounded; veins 8 and 9 anastomosing to form the areole; slight lines of raised scales round the stigmata. Hind wing with vein 5 from lower angle of cell.

2194. **Triorbis annulata**, *Swinh. Trans. Ent. Soc.* 1890, p. 189, pl. 6, fig. 15.

♀. Grey-brown; palpi with a black lateral line on 2nd joint, and speck near apex of 3rd; the antennæ fulvous. Fore wing with some brown and purplish suffusion; dark rufous streaks from base on subcostal and below median nervure; an obliquely waved line from lower angle of cell to inner margin near base; the orbicular and reniform large, indistinct, double ring-marks; an indistinct, irregular, postmedial line, angled beyond the cell; a large, indistinct ring-mark, crossed by a bright pink fascia beyond lower angle of cell; an irregularly sinuous, pale, submarginal line, and an almost marginal line; some black streaks on the veins near apex. Hind wing fuscous brown; the underside paler, with indistinct cell-spot and submarginal band.

Fig. 199.
Triorbis annulata, ♀. ½.

Hab. Thyetmyo. *Exp*. 38 millim.

Genus GADIRTHA.

Gadirtha, *Wlk. Cat.* xiii, p. 1102 (1857).

Type, *G. inexacta*, Wlk.

Range. S. America; China; Sikhim; Moulmein; Borneo; Australia.

Palpi slender, the 2nd joint reaching vertex of head, the 3rd long; antennæ minutely fasciculated; thorax and abdomen smoothly scaled; tibiæ of male fringed with very long hair. Fore wing long and narrow; the apex rounded; the outer margin excised towards outer angle: the areole broad; slight raised tufts of scales on the orbicular and reniform stigmata and below the cell. Hind wing with vein 3 from before angle of cell; veins 4 and 5 from the angle.

2195. **Gadirtha inexacta**, *Wlk. Cat.* xiii, p. 1102; *C. & S.* no. 2403.
Gadirtha impingens, *Wlk. Cat.* xiii, p. 1103; *C. & S.* no. 2402.

Pale red-brown, suffused with grey. Fore wing with a sinuous antemedial line, with fuscous patch on the costa before it; the orbicular small and indistinct; the reniform large with black outline; a fuscous patch on the costa before apex; a crenulate postmedial line; a marginal series of black specks. Hind wing fuscous brown; the cilia pale; some specimens with the basal area pale.

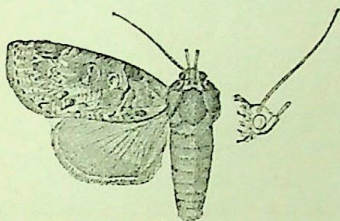



Fig. 200.—*Gadirtha inexacta*, ♂. 1/1.

The fore wing may be ruddy brown, the inner area suffused with grey and tinged with green; or it may be ruddy and dark brown or pale grey-brown.

Hab. China; Sikhim; Moulmein. *Exp.* 50-54 millim.

Genus ARIOLA.

Ariola, *Wlk. Cat.* xii, p. 768 (1857).

Type, *A. cœlisigna*, Wlk.

Range. Ceylon; Borneo.

Palpi porrect, of moderate length, the 2nd joint thickly scaled, the 3rd minute; antennæ simple in male; thorax and abdomen smoothly scaled, the latter long in male. Fore wing of nearly even breadth throughout; the apex rounded; veins 8 and 9 anastomosing to form the areole. Hind wing with veins 3, 4 stalked, 5 from lower angle of cell.

2196. **Ariola cœlisigna**, *Wlk. Cat.* xii, p. 769; *C. & S.* no. 1789.

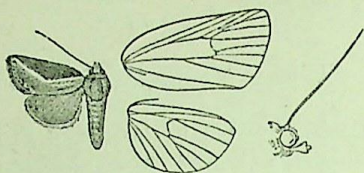



Fig. 201.—*Ariola cœlisigna*, ♂. 1/1.

Head and thorax pale green; abdomen fuscous. Fore wing bright green, with a curved silvery-white fascia from the base to apex; the outer margin pink, with black marginal marks and line. Hind wing fuscous.

Hab. Ceylon; Borneo. *Exp.* 22 millim.

Genus NOLASENA.

Nolasena, *Wlk. Cat.* xii, p. 981 (1857).

Type, *N. ferrifervens*, Wlk.

Range. Ceylon; Burma.

Palpi porrect, the 2nd joint fringed with hair above, the 3rd acute at apex; antennæ minutely ciliated. Fore wing with the apex slightly acute; veins 8 and 9 anastomosing to form the areole.

2197. **Nolasena ferrifervens**, *Wlk. Cat.* xii, p. 982; *C. & S.* no. 2924.

Fig. 202.
Nolasena ferrifervens, ♂. 1/1.

Chestnut- or grey-brown. Fore wing with two parallel oblique antemedial scarlet lines, with a silvery band between them; a waved postmedial oblique scarlet line, with black outer edge and a silvery band beyond it; some white specks on costa towards apex; a marginal series of black and red specks.

The Burmese form is much darker than the Ceylon one, with the scarlet lines narrower.

Hab. Ceylon; Rangoon. *Exp.* 24 millim.

Genus PLOTHEIA.

Plotheia, *Wlk. Cat.* xiii, p. 1108 (1857).
Egelesta, *Wlk. Cat.* xv, p. 1747 (1858).
Galleriomorpha, *Feld. Wien. Ent. Mon.* vi, p. 37, note (1862).
Othora, *Wlk. Cat.* xxxiii, p. 902 (1865).
Selepa, *Moore, Lep. E. I. C.* p. 353 (1858).

Type, *P. decrescens*, Wlk.

Range. Sikhim; throughout Continental India; Ceylon; Java.

Proboscis fully developed; palpi with the 2nd joint upturned, the 3rd porrect and long, the frontal tuft long; antennæ heavily ciliated in male; thorax and abdomen without tufts; fore tibiæ heavily tufted with hair. Fore wing with the outer margin some-

what erect; slight tufts of raised scales on disk; veins 8 and 9 anastomosing to form the areole. Hind wing with veins 3 and 4 from angle of cell, 5 from just above angle.

2198. **Plotheia decrescens**, *Wlk. Cat.* xiii, p. 1104; *C. & S.* no. 2401.
Plotheia frontalis, *Wlk. Cat.* xiii, p. 1109; *Hmpsn. Ill. Het.* ix, pl. 164, figs. 1–32; *C. & S.* no. 2411.
Egelesta rudivitta, *Wlk. Cat.* xv, p. 1748; *C. & S.* no. 2419.
Galleriomorpha lichenoides, *Feld. Wien. ent. Mon.* vi, 1862, p. 38; *C. & S.* no. 2416.
Gadirtha guttulosa, *Wlk. Cat.* xxxiii, p. 897; *C. & S.* no. 2413.
Gadirtha spurcata, *Wlk. Cat.* xxxiii, p. 896; *C. & S.* no. 2420.
Othora canescens, *Wlk. Cat.* xxxiii, p. 904.
Othora onusta, *Wlk. Cat.* xxxiii, p. 905.
Othora signata, *Wlk. Cat.* xxxiii, p. 906.
Othora lata, *Wlk. Cat.* xxxiii, p. 909.
Othora basifascia, *Wlk. Cat.* xxxiii, p. 911; *C. & S.* no. 2408.
Othora subglauca, *Wlk. Cat.* xxxiii, p. 905; *C. & S.* no. 2421.
Othora cinerascens, *Wlk. Cat.* xxxiii, p. 903; *C. & S.* no. 2409.
Othora velata, *Wlk. Cat.* xxxiii, p. 902; *C. & S.* no. 2422.
Othora albotecta, *Wlk. Cat.* xxxiii, p. 903; *C. & S.* no. 2407.
Othora plagiata, *Wlk. Cat.* xxxiii, p. 907; *C. & S.* no. 2418.
Othora concisa, *Wlk. Cat.* xxxiii, p. 910; *C. & S.* no. 2410.
Othora imprimens, *Wlk. Cat.* xxxiii, p. 911; *C. & S.* no. 2414.
Othora albivitta, *Wlk. Cat.* xxxiii, p. 908; *C. & S.* no. 2406.
Plotheia lativitta, *Moore, Lep. Ceyl.* iii, p. 106, pl. 157, fig. 11; *C. & S.* no. 2415.
Plotheia griseovirens, *Moore, Lep. Ceyl.* iii, p. 108, pl. 158, fig. 2; *C. & S.* no. 2412.

Ground-colour of head, thorax, and fore wing pale brown, olive-green, or grey. Fore wing with indistinct double subbasal, antemedial, postmedial, and single submarginal line; the orbicular and reniform represented by raised specks of scales; abdomen and hind wing fuscous, the former with some dark ring-marks.

The colour may be almost uniform olive-brown, green, or pale brown; or the fore wing may have blackish patches at base of inner margin and apex; or the inner area may be suffused with brown and have black longitudinal streaks; or there may be an ochreous patch on the medial costal area; or the whole medial area may be suffused with white, or with a white subbasal band, or with a white patch on centre of inner margin, or patches on thorax and at apex, or small specks scattered over the wing, or a white fascia from base to near outer margin; or the whole medial and outer areas, except the apex, creamy white; the ante- and postmedial lines may be white with smoky black or grey between them, with white subapical streaks and others on inner area; or these streaks may be black or chestnut; or there may be a black stigma below the centre of costa; or the wing may be marked with black specks, or almost wholly suffused with ferruginous red.

Hab. Ceylon. *Exp.* 36 millim.

2199. **Plotheia celtis**, *Moore, Lep. E. I. Co.* p. 353, pl. 16, figs. 8, 8 *a* (larva); *Lep. Ceyl.* iii, pl. 158, fig. 5; *C. & S.* no. 2424.
Subrita curviferella, *Wlk. Cat.* xxxv, p. 1745.
Selepa docilis, *Butl. P. Z. S.* 1881, p. 619; *C. & S.* no. 2425.
Gadirtha discigera, *Wlk. Journ. Linn. Soc.* vii, p. 163.

♀. Head and thorax pale brown; abdomen fuscous. Fore wing pale brown with a purplish-grey tinge; traces of subbasal and medial waved black lines; a double postmedial line excurved round end of cell and enclosing a blackish circular patch, the line crossed by black streaks on each side of vein 2; a waved submarginal pale line and series of short marginal dark streaks. Hind wing whitish, suffused with fuscous towards outer margin.

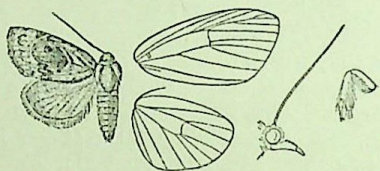



Fig. 203.—*Plotheia celtis*, ♂. ½.

♂ with the hind wing fuscous and a black patch on inner area below.

Docilis is a greyer form from Karáchi.

Larva yellow; the head black; dorsal black patches on 5th, 10th, and 11th somites; a lateral reddish line with a series of black spots.

Hab. Nágas; throughout Peninsular India and Ceylon; Java. *Exp.* 24 millim.

2200. **Plotheia ænescens**, *Moore, Lep. Atk.* p. 288.

♀. Differs from *celtis* in the head and thorax being darker; the fore wing much more suffused with purplish fuscous; the rounded orbicular and lunulate reniform dark and more defined; the postmedial line more sinuous and less excurved beyond the cell. Hind wing pale fuscous.

Hab. Sikhim. *Exp.* 32 millim.

2201. **Plotheia strigifera**, *Moore, Lep. Ceyl.* iii, p. 103, pl. 158, figs. 3, 3 *a* (larva); *C. & S.* no. 2427.

Head, thorax, and abdomen pale brown. Fore wing pale brown suffused with red-brown; the veins streaked with dark brown; an indistinct antemedial curved line and postmedial line excurved round end of cell, with a prominent black fascia between them below median nervure; a waved submarginal and black marginal line. Hind wing pale fuscous.

Another form has the head, thorax, and abdomen whitish grey, the tegulæ ferruginous; fore wing with the basal and outer areas grey, the medial area ferruginous; no black fascia below the median nervure; hind wing white with the margin fuscous.

Larva brownish ochreous, with a dorsal series of slender erect black hairs which are very long and with spatulate ends at anterior and posterior extremities; lateral series of white hairs; a subdorsal black-spotted green band from 5th to 10th somites; dorsal black spots on 2nd to 5th and 11th somites.

Hab. Ceylon. *Exp.* 20 millim.

2202. **Plotheia rabdota**, *Hmpsn. Ill. Het.* viii, p. 88, pl. 146, fig. 4.

♀. Head and thorax pale brown. Fore wing pale brown, the inner margin darker; blackish streaks below the median nervure and from the upper angle of cell to apex and from lower angle to centre of outer margin; a dark patch at outer angle and series of marginal specks. Hind wing whitish; the outer margin very slightly suffused with fuscous.

Hab. Nilgiris. *Exp.* 26 millim.

2203. **Plotheia metaspilella**, *Wlk. Cat.* xxxv, p. 1746.

Head and thorax grey; abdomen brownish. Fore wing grey; traces of a waved antemedial line; an indistinct waved double medial line sending a dark spur outwards in the interno-median interspace to the indistinct curved and waved postmedial line; a dark speck at end of cell; a series of dark submarginal specks. Hind wing white, suffused with fuscous in the male, entirely fuscous in the female.

Hab. Ganjam; Nilgiris. *Exp.*, ♂ 23, ♀ 25 millim.

Genus HYBLÆA.

Hyblæa, *Fabr. Ent. Syst.* iii, 2, p. 127 (1794).

Type, *H. puera*, Cram.

Range. Throughout the tropical and subtropical zones; N. China; Japan.

Head very small; palpi porrect and rostriform; antennæ minutely ciliated in male; thorax and abdomen smoothly scaled; tibiæ clothed with long hair and without spines. Fore wing with the costa arched near base, the inner margin lobed; vein 1 *a* strong and bent down to near centre of inner margin; the cell open; veins 6, 7, 8, 9 from close to angle of cell. Hind wing with the cell open; vein 8 anastomosing with 7 to near middle of cell.

SECT. I. Fore wing with the outer margin not excised below apex and evenly curved.

2204. **Hyblæa puera**, *Cram. Pap. Exot.* pl. 103, figs. D, E; *C. & S.* no. 2232; *Moore, Lep. Ceyl.* iii, pl. 154, figs. 2, 2 *a* (larva).
Noctua saga, *Fabr. Mant. Ins.* ii, p. 137.
Noctua unxia, *Hübn. Eur. Schmett., Noct.* fig. 513.
Heliothis apricans, *Boisd. Faun. Ent. Madag.* p. 98, pl. 15, fig. 7.

Head and thorax greyish red-brown; abdomen black-brown

with orange segmental bands. Fore wing greyish red-brown, irrorated with a few dark specks. Hind wing black-brown, with curved orange band with scarlet edges from upper angle of cell to near anal angle; a band on the margin from vein 2 to anal angle. Underside of fore wing black, with orange fascia in cell and far

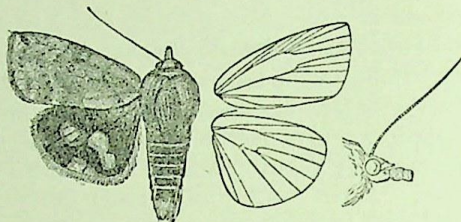



Fig. 204.—*Hyblæa puera*, ♂. 1/1.

beyond it; the costa and apex pale brownish with dark specks; the inner margin yellow. Hind wing pale brownish with dark specks; orange towards anal angle with two large black spots.

Larva with a few short hairs; dark purple-grey above, olive-green below, with dorsal and lateral white lines; a subdorsal series of minute white dots and rings, a series of black dots on lateral line; head and 1st somite black. Food-plant *Bignoniaceæ*.

Hab. W. Indies; S. Africa; throughout India, Burma, and Ceylon; Java; New Guinea; Cape York. *Exp.* 32–40 millim.

SECT. II. Fore wing with the outer margin excised below apex and excurved at centre.

2205. **Hyblæa constellata**, *Guen. Noct.* ii, p. 391; *Moore, Lep. Ceyl.* iii, pl. 154, figs. 3, 3 *a*; *C. & S.* no. 2230.

Head and thorax dark olive-green; abdomen black, with orange segmental rings and crimson at sides towards extremity. Fore wing dark olive-green with dark specks; often with two ante-medial yellowish-white diffused patches; a subapical bar, and brown apical patch on costa. Hind wing black-brown, with two orange spots beyond lower angle of cell and two towards anal angle. Underside of fore wing black, with the costa and inner margin orange; the base of cell, a band at end of it, and one beyond it orange. Hind wing orange, suffused with crimson and with numerous black spots; a black spot at anal angle.

Hab. China; throughout India, Ceylon, and Burma; Malacca; Borneo; Australia. *Exp.* 34–40 millim.

2206. **Hyblæa hypocyanea**, *Swinh. MS.*

Differs from *constellata* in the abdomen being without crimson. Fore wing uniform dark brown speckled with black. Hind wing with the orange spots obsolescent except the one beyond cell. Underside of fore wing with the costa very slightly red-

tinged; the inner area whitish; hind wing suffused with purpish white.

Hab. Khásis. *Exp.* 30 millim. Type in B. M.

2207. **Hyblæa firmamentum**, *Guen. Noct.* ii, p. 392; *C. & S.* no. 2231.

Head, thorax, and abdomen dark red-brown; the last with the segments slightly fringed with yellow. Fore wing red-brown irrorated with dark specks; a chocolate basal patch terminating at end of cell in an acute angle; the part below cell darkest; a chocolate streak from centre of costa to above centre of outer margin; cilia pale in the emargination below apex. Hind wing black-brown, with a yellow spot below centre of costa and another above anal angle which is sometimes obsolescent; two yellow patches on cilia towards anal angle. Underside with the inner area of fore wing yellow and two patches on costa; the hind wing with numerous yellow patches.

The yellow spots of hind wing are often entirely absent above and much reduced on underside.

Hab. China; Sikhim; Khásis. *Exp.* 42 millim.

Genus **ARACHNOGNATHA**, nov.

Type, *A. meterythra*, Hmpsn.

Range. Burma.

Palpi long, porrect, and curved, the 2nd joint clothed with long hair; thorax and abdomen smoothly scaled. Fore wing with the costa highly arched at base, the apex quadrate; the areole long, vein 7 being given off halfway up it and 8 before the end. Hind wing with the inner margin short; veins 3, 4, and 5 from close to angle of cell. Fore tibiæ not tufted.

2208. **Arachnognatha meterythra**, n. sp.

♀. Head, thorax, and abdomen pale brown. Fore wing pale olive-green, with very faint traces of antemedial, medial, and postmedial diffused chestnut bands; a speck of erect black scales

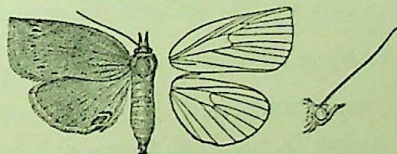



Fig. 205.—*Arachnognatha meterythra*, ♀. 1/1.

representing the orbicular; cilia chestnut. Hind wing vinous pink; an ocellate mark at anal angle consisting of a pale lunule and dark pupil.

Hab. E. Pegu, 5000 feet (*Doherty*). *Exp.* 36 millim. Type in coll. Elwes.

Genus LABANDA.

Labanda, *Wlk. Cat.* xvii, p. 284 (1859).
Bariana, *Wlk. Cat.* xxxii, p. 603 (1865).
Lazanda, *Wlk. Cat.* xxxii, p. 604.

Type, *L. herbealis*, Wlk.
Range. Throughout India and Ceylon.

Palpi smoothly scaled, the 2nd joint reaching vertex of head, the 3rd long and naked; antennæ very long and slender, minutely ciliated in male. Thorax smoothly scaled; abdomen slender, with dorsal tufts on the first two segments, and usually extending far beyond the hind wing; tibiæ almost naked. Fore wing with the apex rounded; the outer margin evenly curved. Hind wing with vein 5 from lower angle of cell.

SECT. I. Hind wing with veins 3 and 4 from cell; male with the retinaculum not bar-shaped.

2209. **Labanda fasciata**, *Wlk. Cat.* xxxii, p. 605; *Hmpsn. Ill. Het.* ix, pl. 167, fig. 14; *C. & S.* no. 1651.
Diomea muscosa, *Wlk. Cat.* xxxiii, p. 898; *C. & S.* no. 3016.

Head and thorax brownish green, irrorated with black scales; abdomen fuscous brown. Fore wing green, irrorated with black; subbasal, double ante- and postmedial waved dark lines; a diffused fuscous antemedial or medial band usually present and traces of the reniform; an irregularly dentate diffused submarginal line;

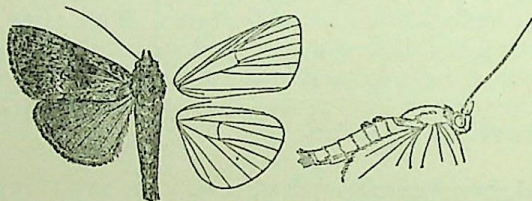



Fig. 206.—*Labanda fasciata*, ♂. ½.

cilia dark intersected with green. Hind wing dark fuscous brown. Underside with a pale mark on costa of fore wing before apex.

Some specimens have whitish suffusion on the medial area of fore wing.

Hab. Nilgiris: Ceylon; Moulmein. *Exp.* 36–40 millim.

2210. **Labanda griseinigra**, n. sp.

Differs from *fasciata* in the head, thorax, and fore wing being variegated with grey, black, and fuscous or brown, but without any green tinge; the postmedial line excurved beyond the cell.

Some specimens are brownish, others fuscous and grey, whilst one has the basal half of fore wing grey with a black patch at base of costa and broad streak below median nervure from base to above outer angle; the medial area suffused with black.

Hab. Sikhim (*Elwes, Knyvett*); Ganjam (*Minchin*). *Exp.* 28 millim. Type in coll. Elwes.

2211. **Labanda saturalis**, *Wlk. Cat.* xxxiv, p. 1251; *C. & S.* no. 3017.
Bocana achine, *Feld. Reis. Nov.* pl. 120, fig. 18; *C. & S.* no. 3014
Bocana viridalis, *Moore, P. Z. S.* 1867, p. 88; *C. & S.* no. 3006.

Differs from *fasciata* in the ground-colour of the fore wing being fuscous brown, irrorated with green scales; the sub-basal and antemedial lines on green bands; some green patches on the submarginal irregular line. Underside without the pale patch on costa.

Hab. Ceylon; E. Pegu. *Exp.* 34 millim.

2212. **Labanda chloromella**, *Wlk. Cat.* xv, p. 1804; *Hmpsn. Ill. Het.* ix, pl. 168, fig. 5; *C. & S.* no. 3015 (part.).

Differs from *saturalis* in the fore wing having patches of brown suffusion on basal and outer areas, instead of the basal area being chiefly green and the outer brown; the ante- and postmedial lines white-edged from below costa to inner margin.

Hab. Ceylon. *Exp.* 26 millim.

2213. **Labanda herbealis**, *Wlk. Cat.* xvii, p. 284; *Hmpsn Ill. Het.* ix, pl. 168, fig. 9; *C. & S.* no. 3015 (part.).
Labanda graminalis, *Hmpsn. Ill. Het.* ix, p. 133, pl. 167, fig. 23.
Bariana submuscosa, *Wlk. Cat.* xxxii, p. 604.

Differs from *fasciata* in the head and thorax being brown. Fore wing green, suffused with brown and not irrorated with black; the dark waved lines on green bands and more dentate. Hind wing paler; underside with slight whitish margin to fore wing: hind wing with the base whitish, the outer area dark with a whitish postmedial band.

Hab. Ceylon; Java. *Exp.* 20–26 millim.

2214. **Labanda semipars**, *Wlk. Cat.* xv, p. 1647; *Hmpsn. Ill. Het.* ix, pl. 168, fig. 3; *C. & S.* no. 3018.
Bocana pamphosalis, *Wlk. Cat.* xix, p. 887.
Gerbatha laticincta, *Wlk. Cat.* xxxiii, p. 913.

Dark red-brown. Fore wing with subbasal, ante- and postmedial waved dark lines on pale brown bands, the last slightly excurved beyond cell; a black line on discocellulars; an indistinct dentate submarginal line with a black subapical speck on it. Hind wing and underside paler.

Hab. Sikhim; W. and S. India; Ceylon; E. Pegu. *Exp.* 28–30 millim.

SECT. II. Hind wing with veins 3 and 4 stalked; male with the retinaculum bar-shaped; the abdomen short.

2215. **Labanda orbicularis**, *Wlk. Cat.* xv, p. 1804; *C. & S.* no. 2417.

♂. Head and thorax black with a few grey and ochreous scales; abdomen fuscous. Fore wing black, irrorated with orange; the

outer area grey except at apex; indistinct waved subbasal, antemedial, and postmedial lines; a black speck at end of cell. Hind wing fuscous.

Hab. Ceylon. *Exp.* 26 millim.

Genus CHLUMETIA.

Chlumetia, *Wlk. Cat.* xxxiv, p. 1270 (1865).
Nachaba, *Wlk. Cat.* xxvii, p. 113 (1863) (præocc.).

Type, *C. transversa*, Wlk.

Range. Sikhim; Ganjam; Ceylon.

Palpi with the 2nd joint reaching vertex of head and thickly clothed with scales, the 3rd short; antennæ of male bipectinated; thorax smoothly scaled; abdomen with dorsal tufts; tibiæ moderately hairy. Fore wing with hardly a trace of raised buttons of scales; veins 8 and 9 anastomosing to form a short areole. Hind wing with veins 3, 4, and 5 from lower angle of cell.

2216. **Chlumetia transversa**, *Wlk. Cat.* xxvii, p. 114; *Moore, Lep. Ceyl.* iii, pl. 151, fig. 3; *C. & S.* no. 2217.
Chlumetia guttiventris, *Wlk. Cat.* xxxiv, p. 1271.

♀. Head pale, the base of palpi black; thorax and abdomen clothed with rufous, fuscous, and grey scales; a ventral series of white spots. Fore wing red-brown with a subbasal line; a double antemedial line; indistinct pale orbicular and reniform spots with rufous medial line between them; a double postmedial line, the inner one rufous, the outer slightly angled at vein 4; traces of a sinuous submarginal line; a marginal series of black specks. Hind wing fuscous.

Fig. 207.—*Chlumetia transversa*, ♀. ½.

The Ganjam specimen is without the white spots on underside of abdomen.

Hab. Ganjam; Ceylon. *Exp.* 18 millim.

2217. **Chlumetia alternans**, *Moore, Lep. Atk.* p. 147; *C. & S.* no. 2215.

♂. Differs from *transversa* in the thorax and abdomen being darker. Fore wing green, with the basal area dark rufous; the lines indistinct except the outer postmedial line, which is rufous and evenly curved; the orbicular obsolete; the reniform prominent and ochreous; the outer area suffused with white. Hind wing with a marginal series of dark striæ.

Hab. Sikhim. *Exp.* 26 millim.

Genus BARASA.

Barasa, *Wlk. Journ. Linn. Soc.* vi, p. 192 (1862).

Type, *B. acronyctoides*, Wlk.

Range. Ganjam; Ceylon; Borneo.

Palpi upturned, reaching above vertex of head, the 2nd joint

thickly scaled, the 3rd long and naked. Antennæ fasciculated in male. Fore wing of male with a tuft of long hair arising from vein 1 near the base; veins 3, 4, and 5 from close to angle of cell; 6 from upper angle; 9 rising from 10 and anastomosing with 8 to form the areole. Hind wing with veins 3 and 4 stalked; 5 from angle of cell; 6 and 7 from upper angle; 8 from 7 at middle of cell.

2218. **Barasa acronyctoides**, *Wlk. Journ. Linn. Soc.* vi, p. 192.
Barasa cana, *Hmpsn. Ill. Het.* ix, p. 107, pl. 163, fig. 5.

♂. Head and thorax white, irrorated with brown scales; collar banded with brown. Fore wing white, irrorated with brown; traces of a subbasal line; an indistinct dentate antemedial black

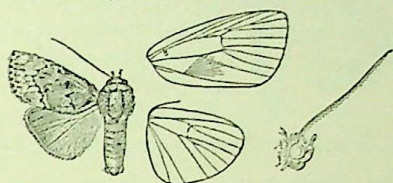



Fig. 208.—*Barasa acronyctoides*, ♂. ½.

line and curved postmedial line; a marginal series of black specks; some patches of brown suffusion on costa and outer area; the tuft of hair on vein 1 black. Hind wing pale fuscous.

Hab. Ganjam; Ceylon; Borneo. *Exp.*, ♂ 28, ♀ 22 millim.

Genus BLENINA.

Blenina, *Wlk. Cat.* xiii, p. 1214 (1857).
Eliocroea, *Wlk. Cat.* xxxiii, p. 935 (1865).
Amrella, *Moore, Lep. Atk.* p. 158 (1882).

Type, *B. donans*, Wlk.

Range. Throughout India, Ceylon, and Burma; Andamans; Ceram; New Guinea; Australia.

Palpi upturned, the 2nd joint reaching vertex of head, the 3rd of moderate length; thorax smoothly scaled; abdomen with slight tufts at the base on the dorsum. Fore wing short and square, with the apex nearly rectangular; the inner margin lobed near base; slight tufts of raised scales on antemedial, medial, and postmedial lines, and on discocellulars; the areole long and narrow; the retinaculum bar-shaped in male. Hind wing with veins 2, 3, 4, and 5 from lower angle of cell.

SECT. I. (*Blenina*). Antennæ of male minutely ciliated; fore wing with the outer margin slightly excised towards outer angle; hind wing rounded.

2219. **Blenina donans**, *Wlk. Cat.* xiii, p. 1215; *Moore, Lep. Ceyl.* iii, pl. 160, fig. 2; *C. & S.* no. 2264.

Blenina grisea, *Moore, P. Z. S.* 1877, p. 607, pl. 60, fig. 1; *C. & S.* no. 2265.
Blenina pannosa, *Moore, Lep. Atk.* p. 157, pl. 5, fig. 4; *C. & S.* no. 2267.

Head and thorax grey, suffused with fuscous; abdomen orange fulvous, with the slight tuft at base grey. Fore wing grey slightly suffused with fuscous, and with a green tinge in places; somewhat indistinct waved subbasal, oblique medial and postmedial, and irregular submarginal dark lines; a dark streak from the disco-

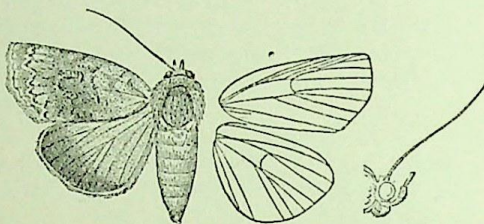



Fig. 209.—*Blenina donans*, ♂. ½.

cellulars to the submarginal line above outer angle. Hind wing orange with marginal fuscous-black border, widest at apex.

The form *grisea* has a large black spot below end of cell, and rather more green suffusion on fore wing: *pannosa* is a greener form, with a large fuscous patch on the outer half of the inner area of fore wing.

Hab. Nilgiris; Ceylon; Andamans; New Guinea. *Exp.* 40 millim.

2220. **Blenina accipiens,** *Wlk. Cat.* xiii, p. 1215; *Moore, Lep. Ceyl.* iii, pl. 160, fig. 3; *C. & S.* no. 2263.

Differs from *donans* in the thorax being browner. Fore wing suffused with fuscous brown; some specimens with the inner area fuscous, others with the basal area and the whole area beyond the medial line suffused. Hind wing with the basal half suffused with brown; the outer band more irregular and widest at costa.

Hab. Throughout India, Ceylon, and Burma; Australia. *Exp.* 38 millim.

2221. **Blenina lichenosa,** *Moore, P. Z. S.* 1877, p. 607, pl. 60, fig. 2; *C. & S.* no. 2266.
Blenina variegata, *Moore, Lep. Atk.* p. 157; *C. & S.* no. 2269.

Differs from *donans* in the antemedial line of fore wing being more obliquely waved and with a line beyond it below cell; a black speck in cell; the postmedial line more waved and incurved below cell. Hind wing fulvous brown, with an orange postmedial band not reaching costa; underside with a medial dark band.

Lichenosa has the thorax dark; the abdomen fulvous brown; fore wing with the basal part green, the rest of wing dark red-brown suffused with fuscous. *Variegata* is much greyer, the

hinder part of collar dark; fore wing with the basal, medial, costal, and outer areas green and fuscous; the medial area white. Another form has the head and thorax green; fore wing with the basal and apical areas bright green, the medial area grey.
Hab. Sikhim; Nágas; Andamans. *Exp.* 40–42 millim.

2222. **Blenina quinaria**, *Moore, Lep. Atk.* p. 158, pl. v, fig. 5; *C. & S.* no. 2268.

Differs from *accipiens* in the fore wing having the ground-colour of costal half ochreous; the inner half whitish; the basal two-thirds slightly suffused with green; a black patch on basal inner area; some specimens with a black fascia from base to outer angle sending two spurs to the cell. Hind wing yellow-brown instead of orange; the outer band regular and widest at apex.
Hab. Sikhim. *Exp.* 40 millim.

Sect. II. (*Amrella*). Antennæ of male (?) fasciculate; fore and hind wings with the outer margins angled in the middle.

*2223. **Blenina angulipennis**, *Moore, Lep. Atk.* p. 158, pl. v, fig. 6; *C. & S.* no. 2270.

♂. Head and thorax olive-green; abdomen greyish. Fore wing olive-green, with four irregular black grey-bordered lines, of which the postmedial is the most prominent and bent inwards below vein 3; some black specks at middle of cell and two on costa towards apex. Hind wing greyish, with a broad fuscous marginal band; the basal area suffused with ochreous. Underside ochreous, with narrow medial and broad outer fuscous bands.
Hab. Sikhim. *Exp.* 44 millim.

Genus CLETTHARINA, nov.

Type, *C. nitens*, Hmpsn.
Range. Burma.
Palpi upturned, the 2nd joint reaching above vertex of head, the 3rd short; antennæ almost simple in male. Retinaculum bar-shaped in male. Fore wing with the costa arched at base and very broad; vein 9 arising from 10, and anastomosing with 8 to form the areole. Hind wing with veins 3 and 4 from cell. The raised scales on fore wing taking the form of a band near end of cell from subcostal nervure to vein 1; male with the area near anal angle of hind wing clothed with modified scales.

2224. **Clettharina nitens**, n. sp.

♂. Head, thorax, and abdomen silvery grey with a red-brown tinge. Fore wing silvery grey, the cell and interno-median inter-space with a golden line as far as the band of raised scales; traces of two very irregularly waved postmedial lines and a submarginal

series of specks. Hind wing silvery grey; the modified scales on anal area white.

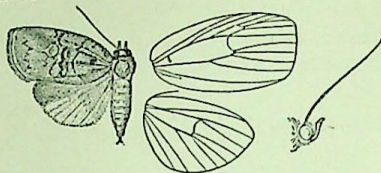



Fig. 210.—*Clettharina nitens*, ♂. ½.

Hab. E. Pegu, 5000 feet (*Doherty*). *Exp.* 30 millim. Type in coll. Elwes.

Genus ARGYROTHRIPA, nov.

Type, *A. lilacina*, Moore.
Range. Sikhim; Indian Peninsula; Ceylon; Burma.
Palpi upturned, the 2nd joint reaching vertex of head, the 3rd usually long; antennæ of male with long cilia; thorax and abdomen smoothly scaled. Fore wing with veins 8 and 9 anastomosing to form the areole, which is long. Hind wing with vein 5 from close to angle of cell.

SECT. I. Hind wing with veins 3 and 4 from cell.

2225. **Argyrothripa lilacina**, *Moore, Lep. Atk.* p. 289.

♂. Head and thorax brown; collar and tegulæ white; abdomen pale fuscous. Fore wing silky white with a slight fuscous tinge; a very indistinct waved antemedial line with two raised specks of

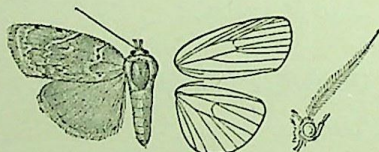



Fig. 211.—*Argyrothripa lilacina*, ♂. ½.

scales on it in the cell; a raised speck of scales at end of cell; a highly excurved and dentate postmedial line; three dark specks on the costa before the apex; a waved submarginal pale line. Hind wing pale brownish fuscous.
Hab. Sikhim; Ceylon. *Exp.* 32 millim.

2226. **Argyrothripa orbifera**, n. sp.

♂. Palpi with the 3rd joint short; the retinaculum bar-shaped. Head, thorax, and abdomen yellowish grey. Fore wing leaden grey, suffused with olive-green as far as the postmedial line; the base and inner margin pale grey; the outer area coppery red; the reniform a prominent round black-edged spot with grey centre; the postmedial line sinuous; an indistinct irregular submarginal line. Hind wing pale fuscous.

Hab. E. Pegu, 5000 feet (*Doherty*). *Exp.* 24 millim. Type in coll. Elwes.

2227. **Argyrothripa occulta**, *Swinh. P. Z. S.* 1885, p. 461, pl. 27, fig. 11; *C. & S.* no. 2426.

♀. Reddish brown. Fore wing irrorated with black; black basal streaks on vein 1 and inner margin; a waved antemedial line; a dark speck in cell; the reniform large and indistinct; a double curved postmedial line; a large subtriangular grey patch on apical part of costa with an indentation in its outer edge; the veins streaked with black at the margin. Hind wing dark fuscous; underside with cell-spot, postmedial line, and the outer area fuscous.

Hab. Poona. *Exp.* 30 millim.

2228. **Argyrothripa xanthosticta**, n. sp.

♂. Brownish grey; palpi white with the sides black; fore tibiæ tufted and with a black spot on them. Fore wing with irregular antemedial line with diffused brown band inside it; a medial sinuous line angled on median nervure; the reniform bright yellow; a postmedial sinuous line recurved to near lower angle of cell, with some brown suffusion beyond it; an indistinct irregularly waved submarginal line; some brown suffusion on outer margin. Hind wings whitish; the outer area fuscous.

Hab. Sikkim. *Exp.* 36 millim. Type in coll. Elwes.

SECT. II. Hind wing with veins 3 and 4 stalked.

2229. **Argyrothripa grisea**, *Hmpsn. Ill. Het.* viii, p. 87, pl. 146, fig. 13.

♂. Head, thorax, and fore wing silvery grey, irrorated with fuscous; the last with the antemedial, medial, and postmedial double lines prominent; a dentate submarginal line; the median nervure at end of cell and the discocellulars dotted with ferruginous scales; a medial fuscous patch on the costa; a series of marginal specks. Hind wing and abdomen fuscous.

Hab. Nilgiris. *Exp.* 30 millim.

2230. **Argyrothripa pallescens**, *Hmpsn. Ill. Het.* ix, p. 108, pl. 163, fig. 25.

♂. Pale greyish white with a brownish tinge. Fore wing with very indistinct double antemedial, medial, and postmedial waved lines and single submarginal line. Hind wing whitish fuscous.

Hab. Ceylon. *Exp.* 24 millim.

2231. **Argyrothripa robusta**, *Moore, Lep. Atk.* p. 288.

♂. Head and thorax pale and dark brown; abdomen pale. Fore wing very pale reddish brown as far as the double highly curved postmedial lines, which are dark and prominent, the area beyond them grey; indistinct subbasal and antemedial waved lines; a dark streak below the cell, terminating in a black medial

spot; inner margin suffused with fuscous; an indistinct waved submarginal line. Hind wing fuscous.

♀. The basal area of the fore wing darker and without the streak and spot.

Hab. Sikhim. *Exp.*, ♂ 26, ♀ 30 millim.

2232. **Argyrothripa niveidisca**, n. sp.

♂. Head greyish; thorax white; abdomen pale fuscous, with black basal dorsal tuft. Fore wing white, pinkish towards the apical area which is black; a triangular black patch on centre of inner margin; some grey on outer margin. Hind wing pale, slightly suffused with fuscous at apex.

Hab. Tenasserim (*Doherty*). *Exp.* 24 millim. Type in coll. Druce.

Genus **NEOTHRIPA**, nov.

Type, *N. punctistigma*, Hmpsn.

Range. Simla; Khásis.

Palpi upturned, the 2nd joint reaching vertex of head and roughly scaled, the 3rd short. Thorax with a high spreading tuft of scales on vertex. Fore wing with the costa arched near base, of almost even width thoughout; vein 8 anastomosing with 9 to form the areole which is short; the raised tufts very slight. Hind wing with vein 5 from below centre of discocellulars and depressed at origin; 3 and 4 from angle of cell.

2233. **Neothripa punctistigma**, n. sp.

Head and thorax grey-brown; abdomen pale fuscous. Fore wing greyish fuscous, the basal and medial costal areas suffused with grey-green; subbasal, ante- and postmedial waved lines, the last excurved beyond the cell; orbicular and reniform outlined by specks of slightly raised black scales; a diffused irregularly waved submarginal line. Hind wing fuscous; underside with cell-spot and irregularly sinuous postmedial line.

Hab. Simla (*Harford*). *Exp.* 30 millim. Type in B. M.

2234. **Neothripa glaucescens**, n. sp.

♂. Head and thorax grey-green mingled with black scales; 3rd joint of palpi black; abdomen whitish with a fuscous tinge. Fore

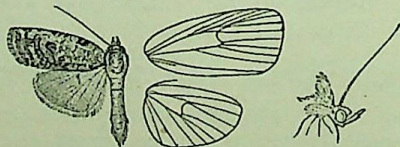



Fig. 212.—*Neothripa glaucescens*, ♂. ½.

wing grey-green, the outer area fuscous except at apex; numerous white specks on basal area; a dark patch at end of cell and another

below the end, the former with some erect black scales on it; faint traces of antemedial, medial, postmedial, and submarginal waved lines, the last with three reddish subapical streaks crossing it; a marginal series of black specks. Hind wing pale fuscous; underside with cell-spot and sinuous postmedial line.

Hab. Khásis, 4,000 feet (*Elwes*). *Exp.* 28 millim. Type in coll. Elwes.

Genus **HYPOTHRIPA**, nov.

Type, *H. curiosa*, Swinh.

Range. Burma.

Palpi upturned, the 2nd joint reaching vertex of head, the 3rd long. Fore wing with veins 8 and 9 anastomosing to form the areole, which is long. Hind wing with veins 3 and 4 stalked, 5 absent.

2235. **Hypothripa curiosa**, *Swinh. Trans. Ent. Soc.* 1890, p. 235.

♂. Head and thorax greyish fuscous; abdomen brownish. Fore wing pale brown suffused with purplish grey; two waved brown antemedial lines; a finer medial line and indistinct crenulate postmedial and submarginal lines; a dark brown apical patch. Hind wing whitish, with fuscous suffusion on apical area. Underside of fore wing fuscous, with a pale patch on costa near apex with dark striæ on it. Hind wing whitish, with the costal area fuscous.

Fig. 213.—*Hypothripa curiosa*, ♂. ½.

Another specimen has the antemedial lines of hind wing more oblique, the apical patch absent.

Hab. Rangoon; Tenasserim. *Exp.* 24 millim.

2236. **Hypothripa cana**, n. sp.

♀. Head and thorax greyish white; abdomen brownish white. Fore wing greyish white, with faint traces of waved antemedial, medial, postmedial, and submarginal lines. Hind wing semihyaline and opalescent; the apical area slightly tinged with fuscous.

Hab. E. Pegu, 5000 feet (*Doherty*). *Exp.* 32 millim. Type in coll. Elwes.

Genus **CLETTHARRA.**

Cletthara, *Wlk. Cat.* xxvii, p. 101 (1863).
Orosa, *Wlk. Cat.* xxxiv, p. 1222 (1865).

Type, *C. valida*, Wlk.

Range. Karáchi; Bombay; Nilgiris; Ceylon; E. Himalayas; Assam; Burma; Andamans; Borneo.

Palpi upturned and slightly scaled. Antennæ minutely ciliated

in male and simple in female. Fore wing with veins 3, 4, 5 from near angle of cell; 6 from upper angle; veins 7, 8, 9 stalked. Hind wing with veins 3 and 4 usually stalked; 5 from just above angle of cell; 6 and 7 from upper angle, 8 from middle of cell.

SECT. I. Fore wing with vein 10 stalked with 7, 8, 9; hind wing with veins 3, 4 stalked.

2237. **Clettharra valida**, *Wlk. Cat.* xxvii, p. 101; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 12.

Head, thorax, and abdomen pale brown. Fore wing pale red-brown, an oblique black streak from the costa near base to above centre of inner margin; a waved antemedial pale line; a postmedial line angled outwards beyond the cell; the inner area grey from the base to the postmedial line; the apical area suffused with white; three black costal striæ before the apex; two black streaks above outer angle, which is suffused with black and white. Hind wing white, slightly suffused with fuscous towards outer margin.

Fig. 214.—*Clettharra valida*, ♂. ½.

Hab. Ceylon; Borneo. *Exp.* 24 millim.

2238. **Clettharra albonotata**, n. sp.

♂. Differs from *valida* in the thorax being marked with white. Fore wing without the oblique black streak; three waved white antemedial lines; a triangular white patch on centre of inner margin; the postmedial line indistinct and excurved, not angled beyond cell; a triangular white patch with black mark on it on apical part of costa; a white spot on centre of outer margin.

Hab. Tenasserim (*Doherty*). *Exp.* 24 millim. Type in coll. Druce.

2239. **Clettharra basalis**, *Moore, Lep. Ceyl.* iii, p. 105, pl. 158, fig. 7; *C. & S.* no. 2431.

Differs from *valida* in the fore wing being more uniform brown with no white on inner margin; a black patch at base of costa; the waved line medial, more distinct, and erect; the highly angled postmedial line arising from the costa beyond the middle. Hind wing with the outer area more suffused with fuscous.

Hab. Ceylon. *Exp.* 22 millim.

2240. **Clettharra variegata**, n. sp.

♂. Head and thorax pale reddish brown, collar marked with fuscous; abdomen fuscous. Fore wing pale red-brown; the ante- and postmedial lines composed of ill-defined white and black lines on a fuscous ground; apical area fuscous brown; a marginal

series of black specks. Hind wing whitish; underside with a diffused fuscous line across the apex.

Hab. Nágas; Tenasserim (*Doherty*). *Exp.* 20 millim. Type in coll. Elwes.

2241. **Cletharra tortricoides,** *Wlk. Cat.* xxxiv, p. 1223; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 23; *C. & S.* no. 2949.

♀. Pale red-brown. Fore wing with a patch of dark scales on basal costal area; medial, postmedial, and submarginal series of dark specks, the postmedial series highly excurved beyond the cell.

Hab. Ceylon. *Exp.* 20 millim.

Sect. II. Fore wing with vein 10 from the cell.

A. *Hind wing with veins 3 and 4 stalked.*

2242. **Cletharra vitea,** *Swinh. P. Z. S.* 1885, p. 460, pl. 27, fig. 17; *C. & S.* no. 2428; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 24.

♂. Head, thorax, and abdomen dark fuscous, the last with dorsal tufts. Fore wing with the basal half black, the outer half brown suffused with fuscous; subbasal and antemedial lines of raised scales which stop at the median nervure; medial and postmedial nearly straight lines of raised scales; a large reniform stigma with double black and fuscous outline. Hind wing dark fuscous.

♀. Head, thorax, and abdomen paler; the outer area of the fore wing suffused with greyish white. Hind wing pale fuscous.

Hab. Bombay; Khandála; Ceylon. *Exp.*, ♂ 22, ♀ 24 millim.

2243. **Cletharra nigridisca,** *Hmpsn. Ill. Het.* viii, p. 87, pl. 146, fig. 11.

♀. Very pale brown. Fore wing with a large lozenge-shaped black patch occupying the greater part of the medial area, and sending a fascia to the outer margin below the apex; a black streak on vein 2; two black specks on costa towards apex. Hind wing whitish.

Hab. Nilgiris. *Exp.* 24 millim.

2244. **Cletharra sceptica,** *Swinh. P. Z. S.* 1885, p. 461, pl. 27, fig. 6; *C. & S.* no. 2430.

♂. Head, thorax, and fore wing pale grey; the last with a few darker scales forming traces of subbasal, medial, postmedial, and submarginal waved lines; a dark speck at end of cell and one at origin of vein 2; a series of marginal specks. Abdomen and hind wing pale fuscous.

Hab. Bombay; E. Pegu; Andamans. *Exp.* 21 millim.

2245. **Clettharra apicalis**, n. sp.

♂. Head, thorax, and fore wing whitish, irrorated with dark scales; abdomen pale brown. Fore wing with a dark patch at base of costa and blackish patch at base; a black speck below angle of cell; some reddish suffusion beyond the cell; traces of antemedial, postmedial, and submarginal waved lines; a marginal series of black specks. Hind wing whitish; the outer area suffused with fuscous.

Hab. E. Pegu (*Doherty*). *Exp*. 30 millim. Type in coll. Elwes.

2246. **Clettharra punctata**, *Swinh. Trans. Ent. Soc.* 1890, p. 236, pl. 7, fig. 15.

Very pale reddish brown. Fore wing with three obliquely placed subbasal black specks, and another below end of cell; indistinct ante- and postmedial waved lines, the former with a fuscous patch beyond it on the costa; a sinuous submarginal series of black specks and marginal series; a fuscous spot at apex. Hind wing brownish fuscous, darkest towards outer margin.

Hab. Sikhim; Bhután; Nágas; Rangoon; Tenasserim. *Exp*. 22 millim.

2247. **Clettharra triangularis**, n. sp.

♂. Ochreous white. Fore wing irrorated with a few black scales; a dark brown triangular patch on centre of inner margin; a curved line from the centre of costa to near outer angle, the apical area beyond it dark brown. Hind wing with the apical area slightly suffused with fuscous.

Hab. Dunsiri Valley, Assam (*Doherty*). *Exp*. 20 millim. Type in coll. Elwes.

B. *Hind wing with veins* 3 *and* 4 *from cell; palpi short and slight.*

2248. **Clettharra ænea**, *Swinh. P. Z. S.* 1884, p. 520, pl. 48, fig. 1; *C. & S.* no. 2405.

♀. Fuscous brown. Fore wing with traces of subbasal, antemedial, and submarginal waved bands.

Hab. Karáchi. *Exp*. 24 millim.

Sect. III. Male with the collar forming an erect peak; hind wing with a tuft of long hair from below the costa; the median nervure tufted.

2249. **Clettharra floccifera**, n. sp.

♂. Very pale red-brown; collar dark at centre; anal tuft jet-black below. Fore wing with the inner area suffused with fuscous; faint traces of antemedial and medial oblique lines from the costa; the postmedial line represented by dark streaks on the veins; some dark specks on the cilia. Hind wing white.

Hab. Nágas; Tenasserim (*Doherty*). *Exp*. 22 millim. Type in coll. Elwes.

Genus SARROTHRIPA.

Sarrothripa, *Curt. Brit. Ent.* i, fig. 29 (1824).
Axia, *Hübn. Verz.* p. 395 (1818, non descr.).
Symitha, *Wlk. Cat.* xxxv, p. 1731 (1866).
Subrita, *Wlk. Cat.* xxxv, p. 1743.

Type, *S. revayana*, Scop., from Europe.

Range. Nearctic region; Europe; Sikhim; Nága Hills; Ceylon; Pegu; Java; Borneo.

Palpi very long, obliquely porrect, and heavily scaled. Antennæ minutely ciliated in male. Fore leg with the femur and tibia fringed with very long hair. Fore wing long and narrow, the apex bent downwards; veins 3, 4, 5 from near angle of cell; 6 from below upper angle; 7 from upper angle; 8, 9, 10 stalked. Hind wing with veins 3 and 4 stalked; 5 from angle of cell; 6 and 7 from upper angle; 8 from middle of cell.

2250. **Sarrothripa sinuosa,** *Moore, Lep. Atk.* p. 289.

Grey. The fore wing crossed by numerous indistinct waved lines, of which the double irregular ante- and postmedial are the most distinct; a sinuous series of submarginal black specks; a diffused fuscous patch on middle of costa. Hind wing pale fuscous.

In the E. Pegu specimen the markings are darker; the costal patch blackish, with a white spot beyond it between the postmedial and submarginal lines.

Hab. Sikhim; Nágas; E. Pegu. *Exp.* 26 millim.

*2251. **Sarrothripa fasciosa,** *Moore, Lep. Atk.* p. 289.

♀. Grey-brown. Fore wing with a brown subbasal and two antemedial slightly outwardly oblique bands, an erect medial sinuous line; an excurved waved postmedial line with some dark suffusion beyond it; a submarginal sinuous fuscous band; a pale-edged lunule at end of cell. Hind wing pale fuscous.

Hab. Sikhim. *Exp.* 25 millim.

2252. **Sarrothripa indicatana,** *Wlk. Cat.* xxviii, p. 333; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 13.

Head and thorax whitish, much suffused with black. Fore wing

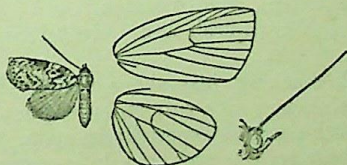



Fig. 215.—*Sarrothripa indicatana*, ♂. 1.

grey, irrorated with fuscous; indistinct antemedial, medial, and

postmedial double waved lines; large blackish ante- and postmedial patches on the costa, and one on the middle of inner margin; white medial and apical costal patches, the former with two black specks on it; a submarginal maculate waved line. Abdomen and hind wing pale fuscous.

Hab. Ceylon; Nágas. *Exp.* 20 millim.

2253. **Sarrothripa nolalella**, *Wlk. Cat.* xxxv, p. 1731; *Hmpsn. Ill. Het.* ix, p. 163, fig. 6.
Sarrothripa indica, *Feld. Reis. Nov.* pl. 106, fig. 19; *C. & S.* no. 2429.

Differs from *indicatana* in the antemedial, medial, and postmedial lines being better defined; the last curved but not waved; the white medial and black postmedial patches on the costa absent; also the black patch on inner margin; the waved submarginal line not so prominent. Hind wing dark fuscous.

Hab. Ceylon; Java. *Exp.* 22 millim.

Subfamily EUTELIINÆ.

Palpi with the 2nd joint straight; abdomen longer than the hind wing, with a long tubular or paired anal tufts. Fore wing increasing in width to outer margin; veins 8 and 9 anastomosing to form the areole. Hind wing with veins 3, 4, 5 from lower angle of cell, 5 being fully developed; veins 6, 7 from upper angle.

Larvæ with 4 pairs of abdominal prolegs.

Key to the Genera.

A. Abdomen with a long tubular anal tuft.
- *a.* Antennæ of normal length .... 1. INGURA, p. 388.
- *b.* Antennæ almost as long as fore wing ...... 2. ANUGA, p. 389.

B. Abdomen with paired anal tufts .... 3. EUTELIA, p. 390.

Genus **INGURA**.

Ingura, *Guen. Noct.* ii. p. 309 (1852).

Type, *I. lunodes*, Guen., from America.

Range. Nearctic, Neotropical, and Oriental regions; Friendly Islands.

Palpi upturned, reaching just above vertex of head; thorax smoothly scaled; abdomen with tuft on 1st segment and very long, with a large anal tubular tuft especially in male. Fore wing with the costa nearly straight, the apex nearly rectangular; the outer margin obliquely curved; the inner margin lobed near base.

In the typical group (Sect. I.) the palpi are hairy; the antennæ of male bipectinated to two-thirds length; the tibiæ hairy.

Sect. II. Palpi nearly naked; antennæ of male pectinated for two-thirds length; fore tibiæ with a tuft of long hair from the femoro-tibial joint.

A. *Antennæ of male with the branches on the outer side very short.*

2254. **Ingura subapicalis**, *Wlk. Cat.* xii, p. 883; *C. & S.* no. 1199.
Ingura recurrens, *Wlk. Cat.* xv, p. 1779.

Dark fuscous greyish brown. Fore wing with double dark antemedial line incurved below the cell; minute and very indistinct orbicular and reniform spots; an obscure waved medial line; a double postmedial line highly angled outwards beyond the cell, with a chocolate patch beyond it on the costa; traces of a pale waved submarginal line; a lunulate marginal line. Hind wing with the basal area pale; the veins and outer area fuscous; a pale patch at anal angle.

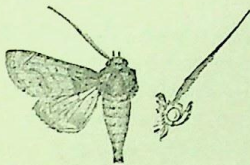



Fig. 216.
Ingura subapicalis, ♂. 1/1.

Hab. N.W. Himalayas; Karáchi; Calcutta. *Exp.*, ♂ 28, ♀ 36 millim.

B. *Antennæ of male bipectinate, the branches stiff.*

2255. **Ingura cristatrix**, *Guen. Noct.* ii, p. 313; *C. & S.* no. 1198.

Head, thorax, and abdomen brownish grey. Fore wing red-brown; an oblique dark line from lower angle of cell to inner margin near base, the area inside it pinkish ochreous; a speck at lower angle of cell and obscure line from it to inner margin; a postmedial line highly excurved to near outer margin, then bent inwards to near lower angle of cell and inner margin, the area inside it pinkish ochreous; apex grey or ochreous; an indistinct highly dentate submarginal line. Hind wing whitish, more or less suffused with brown, and with a pale patch at anal angle.

Hab. Nilgiris; Andamans; Java; Friendly Islands. *Exp.* 30–36 millim.

Genus ANUGA.

Anuga, *Guen. Noct.* ii, p. 307 (1852).
Piada, *Wlk. Cat.* xv, p. 1746 (1858).
Cœcila, *Wlk. Cat.* xv, p. 1824 (1858).
Spersara, *Wlk. Journ. Linn. Soc.* vii, p. 174 (1864).

Type, *A. constricta*, Guen.
Range. China; Sikhim; Malabar Coast; Andamans; Borneo; Java.

Palpi upturned, the 2nd joint not reaching the vertex of head and fringed with hair in front, the 3rd short and naked; vertex of head with ridges of hair; antennæ very long, with uniseriate

short branches in male. Thorax and abdomen smoothly scaled, the latter long with tubular anal tuft. Fore wing very long and narrow; the apex rounded; the outer margin oblique; the cilia crenulate; male with a narrow costal fold acting as retinaculum. Hind wing with the cilia crenulate; the outer margin excised towards anal angle.

2256. **Anuga constricta**, *Guen. Noct.* ii, p. 308; *C. & S.* no. 2208.
Piada multiplicans, *Wlk. Cat.* xv, p. 1747; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 7; *C. & S.* no. 1878.
Spersara glaucopoides, *Wlk. Journ. Linn. Soc.* vii, p. 175.
Cœcila complexa, *Wlk. Cat.* xv, p. 1825.

Grey, suffused with reddish fuscous; abdomen with the dorsum paler, except the penultimate segment. Fore wing with waved subbasal line; double waved antemedial line, single medial, double postmedial, and single submarginal lines; a speck at middle of cell, and black and chestnut lunule at end of it; the outer area fuscous, with a series of marginal black specks. Hind wing with indistinct medial and postmedial ochreous lines only developed towards inner margin; a large ochreous marginal patch towards anal angle; a series of black and ochreous marginal specks; underside with large deep black cell-spot and three postmedial waved lines, the outer with ochreous patch on it towards anal angle.

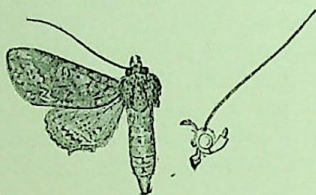



Fig. 217.
Anuga constricta, ♂. ½.

The form *multiplicans* has the fore wing more variegated with ochreous; hind wing with the ochreous patch above anal angle large.

Hab. Hongkong; Canara; Nilgiris; Andamans; Singapore; Borneo; Java. *Exp.*, ♂ 46, ♀ 50 millim.

2257. **Anuga lunulata**, *Moore, P. Z. S.* 1867, p. 62; *C. & S.* no. 2209.

Differs from *constricta* in the fore wing having the costal area ochreous; the waved lines blackish and minutely dentate; the orbicular a small ring-spot; the reniform indistinct. Hind wing with the medial line more distinct; the patch at anal angle smaller, rufous at margin, and with black specks inside it; underside with the cell-spot small.

Hab. Sikhim. *Exp.* 40 millim.

Genus **EUTELIA**.

Eutelia, *Hübn. Verz.* p. 259 (1818).
Eurhipia, *Boisd. Ind. Meth.* p. 73 (1829).
Penicillaria, *Guen. Noct.* ii, p. 302 (1852).
Targalla, *Wlk. Cat.* xiii, p. 1007 (1857).
Cryassa, *Wlk. Cat.* xv, p. 1745 (1858).

Type, *E. adulatrix*, Hübn., from Europe.

Range. N. and S. America; throughout India, Ceylon, and Burma; Andamans; Java; Australia.

Differs from *Ingura* in the thorax and abdomen being typically stouter, the latter with a pair of anal tufts and extremely slight dorsal tufts on medial segments.

SECT. I. (*Targalla*). Antennæ of male almost simple.

A. *Fore wing with the outer margin slightly angled, the cilia crenulate; tibiæ hairy.*

2258. **Eutelia delatrix**, *Guen. Noct.* ii, p. 304; *C. & S.* no. 2193.
Penicillaria palliatrix, *Guen. Noct.* ii, p. 305.
Penicillaria ludatrix, *Wlk. Cat.* xv, p. 1773.
Targalla infida, *Wlk. Cat.* xiii, p. 1008; *C. & S.* no. 2194; *Moore, Lep. Ceyl.* iii, pl. 151, figs. 6, 6 *a* (larva).
Cryassa bifacies, *Wlk. Cat.* xv, p. 1745; *Moore, Lep. Ceyl.* iii, pl. 151, figs. 5, 5 *a*; *C. & S.* no. 2192.
Eutelia repleta, *Wlk. Cat.* xxxiii, p. 821; *C. & S.* no. 2195.
Eutelia impleta, *Wlk. Cat.* xxxiii, p. 822.
Eutelia plusioides, *Wlk. Cat.* xxxiii, p. 822.
Eurhipia prætexta, *Feld. Reis. Nov.* pl. 111, fig. 24.

Dull red-brown. Fore wing with the basal half dark, bounded by a slightly oblique line with whitish edge; the outer area paler red-brown, with a triangular chocolate patch before apex with pale edges and three pale specks on it; the reniform narrow and grey; traces of very numerous waved lines. Hind wing dark fuscous brown; the inner margin and vein 2 with some rufous specks on them; the cilia rufous. Underside with the basal and inner areas paler; fore wing with some grey towards apex and two postmedial lines; hind wing with black cell-spot and three minutely waved lines.

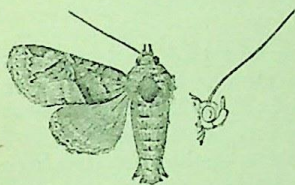



Fig. 218.
Eutelia delatrix, ♂. $\frac{1}{1}$.

The form *palliatrix* sometimes has, beyond the cell of fore wing, slight dark marks, which may, however, be quite absent; in *delatrix* there is a large dark triangular mark beyond the cell and a dark speck on inner margin; *bifacies* has an olive tinge and is much more variegated; the reniform normally white and quadrate.

Larva green, the sides paler; a slender subdorsal whitish line and series of small lateral spots, or the line may be yellow with another line between the spiracles, which are brown, with a few short hairs from them. Pupa in a slight cocoon under leaves.

Hab. Throughout India, Ceylon, and Burma; Java; Australia. *Exp.* 30–34 millim.

B. *Fore wing with the outer margin not angled, the cilia non-crenulate; tibiæ almost naked.*

2259. **Eutelia deleta,** *Hmpsn. Ill. Het.* viii, p. 81, pl. 146, fig. 15.

Greyish fuscous brown; head and metathorax dark; palpi with a pale spot at base of 2nd joint in front; base of abdomen pale above. Fore wing greyish; the outer area suffused with brown; traces of several oblique lines; a sinuous postmedial double line angled below costa and excurved round end of cell, then oblique to centre of inner margin. Hind wing dark fuscous brown; the underside pale, with waved lines on outer area.

Hab. Sikhim; Nilgiris; Ceylon. *Exp.* 24 millim.

2260. **Eutelia cinctipalpis,** *Wlk. Cat.* xxxiii, p. 820; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 16; *C. & S.* no. 2202.

Ægilia angulata, *Moore, Lep. Atk.* p. 146; *C. & S.* no. 2382.

♀. Differs from *deleta* in the lines of the fore wing being less oblique and more waved; the postmedial line not better defined than the others nor angled below the costa; palpi with pale spots on 2nd joint in front.

Hab. Sikhim; Manipur; Nágas; Ceylon. *Exp.*, ♂ 30, ♀ 28 millim.

2261. **Eutelia albiceps,** n. sp.

♂. Palpi whitish, black at base; the vertex of head whitish; thorax dark purplish brown; abdomen dark red, with the base purplish. Fore wing with the basal half dark purplish with indistinct subbasal line, obliquely curved green antemedial line, and bounded by the pale elongate reniform and a double dark line from median nervure to inner margin; the outer area pale purplish fuscous, with three indistinct rufous waved postmedial lines angled below the costa, and with a large black V-mark on them beyond cell; a triangular rufous patch on costa before apex, with a green spot below it; an indistinct waved submarginal line. Hind wing dark fuscous, with traces of a pale postmedial line and some rufous patches near anal angle; underside greyish, with cell-spot and three waved lines.

Hab. Tenasserim Valley (*Doherty*). *Exp.* 22 millim. Type in coll. Druce.

2262. **Eutelia obscura,** *Moore, Lep. Atk.* p. 146; *C. & S.* no. 2384.

Head and collar chocolate; thorax dark purplish red-brown; abdomen paler. Fore wing dark fuscous red-brown; the costal area purplish; a rufous speck in cell; some black and rufous strigæ on the apical part of outer margin.

Hab. Sikhim; Nágas; Borneo. *Exp.* 30 millim.

2263. **Eutelia mediifascia**, n. sp.

Olive-brown; base of abdomen with a pale band. Fore wing olive-green; a double antemedial curved line: a pale medial band; a double postmedial line excurved beyond cell; some short streaks on outer area; a pale dentate submarginal line. Hind wing dark fuscous, with a pale speck on outer margin at vein 2.

Hab. E. Pegu (*Doherty*); Perak (*Kunstler*). *Exp.* 22 millim. Type in coll. Elwes.

2264. **Eutelia albomaculata**, n. sp.

♀. Fuscous red-brown; abdomen with pale basal band. Fore wing with traces of double ante- and postmedial lines, dentate submarginal line, and dark spot at end of cell. Hind wing with the basal half pale, the outer fuscous.

Hab. Sikhim (*Elwes*). *Exp.* 22 millim. Type in coll. Elwes.

SECT. II. (*Penicillaria*). Antennæ of male serrate, with fascicles of long cilia; the cilia of fore wing non-crenulate.

2265. **Eutelia jocosatrix**, *Guen. Noct.* ii, p. 304; *Moore, Lep. Ceyl.* iii, pl. 151, figs. 8, 8 *a* (larva); *C. & S.* no. 2199.

Dark purplish red-brown. Fore wing with traces of subbasal line; an indistinct antemedial line angled on median nervure; a postmedial line angled beyond cell, with chocolate below the angle, and joined by a chocolate patch from costa inside the indistinct submarginal angled whitish line; a pale streak and slight fold from centre of cell to outer margin. Hind wing white, with dark cell-spot; the outer area purplish brown; underside with the cell-spot very prominent and black.

Larva green, with sublateral dark striæ; the somites with small purple spots and a subdorsal series of larger spots; a few hairs from the spiracles. Food-plant *Terminalia belerica*.

Hab. Throughout India and Ceylon; Java. *Exp.* 30 millim.

2266. **Eutelia maculata**, *Butl. Ill. Het.* vii, p. 71, pl. 130, fig. 5.

Differs from *jocosatrix* in the fore wing having the antemedial line on a diffused ochreous band with a greyish-white line inside it; a white line beyond the postmedial line, with a black spot below its angle; a black speck in the angle of the inner line; no chocolate patches; some bluish grey inside the submarginal line above outer angle. Hind wing with a whitish streak above anal angle.

Hab. N.W. Himalayas. *Exp.* 30 millim.

SECT. III. Antennæ of male bipectinate.

A. *Fore wing with the cilia non-crenulate.*

2267. **Eutelia nugatrix,** *Guen. Noct.* ii, p. 303, pl. 14, fig. 7; *C. & S.* no. 2201.
Penicillaria lineatrix, *Wlk. Cat.* xv, p. 1776; *C. & S.* no. 2200.
Eutelia simplex, *Wlk. Cat.* xxxiii, p. 824.

Differs from *jocosatrix* in the collar being slightly fringed with grey. Fore wing with the lines paler and more prominent; the reniform prominent; the postmedial line excurved round cell, and without chocolate on it; the chocolate inside the submarginal line in the form of a short band; a small patch above outer angle. Hind wing with a chocolate patch on the margin near anal angle; underside with the outer area ferruginous.

In the form *lineatrix* the submarginal line of fore wing is white and prominent, with a slender white line inside it, of which there are only traces in the typical form.

Hab. Throughout India and Ceylon; Andamans. *Exp.* 30 millim.

2268. **Eutelia fulvipicta,** n. sp.

♂. Differs from *nugatrix* in the head, thorax, and base of abdomen being suffused with orange-fulvous, the abdomen with white dorsal spot at centre. Fore wing with the inner basal half orange-fulvous, and a large patch of that colour on the costal area before apex; the costa with small white spots at antemedial line, centre, and submarginal line, and specks towards apex; some grey submarginal suffusion near outer angle. Hind wing with the basal area yellowish; the outer purplish band broader; the underside without ferruginous suffusion.

Hab. Nága Hills, 3000 feet (*Doherty*). *Exp.* 30 millim. Type in coll. Elwes.

2269. **Eutelia apicifascia,** n. sp.

♀. Head and thorax rufous brown; abdomen pale. Fore wing dark red-brown, the basal half variegated with pinkish and dark marks; an ochreous spot at end of cell; a curved and waved postmedial whitish line double at costa, where it is joined by a broad pale fawn streak from apex; an indistinct submarginal pale dentate line; the apex plum-coloured; a marginal series of black specks. Hind wing with the basal area pale; the outer fuscous, with dark specks on inner margin and vein 2; cilia rufous. Underside suffused with red; fore wing with double crenulate postmedial line; hind wing with cell-spot, waved medial line, and double crenulate postmedial line.

Hab. Bombay (*Leith*). *Exp.* 30 millim. Type in B. M.

B. *Fore wing with the cilia crenulate.*

2270. **Eutelia inextricata,** *Moore, Lep. Atk.* p. 147; *C. & S.* no. 2205.

Head and collar chestnut; thorax dark red-brown, with white lines; abdomen fuscous, with rufous dorsal marks on 1st segment, then some long white hair and rufous tufts on distal segments; some lateral rufous marks. Fore wing pale brown; some white suffusion and curved white lines on basal area; reniform with white outline; three sinuous postmedial lines excurved beyond cell, the inner with crimson below costa and at middle and metallic green at inner margin; the two outer lines with orange spots at inner margin; the outer margin with a series of black specks and metallic-green spot at centre, with some crimson below it. Hind wing with the basal area semihyaline white; the outer area fuscous brown, with a white streak at anal angle, and a marginal series of dark striæ.

Hab. N. China; N.W. Himalayas; Sikhim; Assam; Ceylon. *Exp.* 32–40 millim.

2271. **Eutelia excitans,** *Butl. P. Z. S.* 1886, p. 381; *C. & S.* no. 2198.

Differs from *inextricata* in the collar being white and fuscous; the thorax pale red, the abdomen fuscous. Fore wing pale red, with more white on the basal costal area; the markings on the postmedial line and outer margin much paler. Hind wing with some white submarginal spots on the dark band and some pale red on the centre of margin.

Hab. N.W. Himalayas. *Exp.* 44 millim.

SECT. IV. Palpi nearly naked; antennæ of male serrate and highly fasciculate for two-thirds length; no tuft on fore leg.

2272. **Eutelia dulcilinea,** *Wlk. Journ. Linn. Soc.* vii, p. 66.
Eutelia dimidiata, *Wlk. Journ. Linn. Soc.* vii, p. 66.
Penicillaria chalybsa, *Hmpsn. Ill. Het.* viii, p. 80, pl. 146, fig. 1.

Head white and black; thorax and abdomen pale slate-colour. Fore wing pale slate-colour, with a dark basal speck; a white and black antemedial line angled below costa; an indistinct angled medial line; the reniform dark, with white edge; some white specks on costa towards apex; a pale indistinct submarginal line with a dark triangular patch inside it at costa and subapical black V-mark. Hind wing blackish; the basal area pale; indistinct medial and submarginal lines, the latter with whitish outside it at costa and towards anal angle; some whitish marks on margin.

Hab. Sikhim; Nilgiris; Ceylon; Borneo. *Exp.* 28 millim.

SECT. V. Antennæ of male with short fasciculated cilia; thorax and abdomen more slender.

2273. **Eutelia discistriga**, *Wlk. Cat.* xxxiii, p. 823; *C. & S.* no. 2203.

Head, thorax, and abdomen clothed with pale and dark scales; the collar with a chestnut tinge. Fore wing clothed with pale and dark brown and chestnut scales; numerous ill-defined lines on the basal area; a pale patch with a dark hoop above it at end of cell; the postmedial dark line with a quadrangular sinus beyond cell and with traces of other lines beyond it; an indistinct irregularly waved submarginal pale line. Hind wing whitish; the veins and outer area fuscous.

Hab. Aden; Karáchi; Nilgiris. *Exp.* 34 millim.

2274. **Eutelia favillatrix**, *Wlk. Cat.* xv, p. 1778; *C. & S.* no. 2204; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 15.

Differs from *discistriga* in the head, thorax, abdomen, and fore wing being variegated with crimson, orange, and ochreous scales; some metallic-blue scales on metathorax; a whitish dorsal patch on centre of abdomen. Fore wing with a raised tuft of brown scales at centre of cell and crimson tuft at end of it.

Hab. Throughout India and Ceylon. *Exp.* 28 millim.

Subfamily STICTOPTERINÆ.

Palpi slender and of moderate length. Abdomen hardly longer than the hind wing. Fore wing increasing in width to outer margin, usually long and narrow, with raised tufts more or less developed; vein 6 from angle of cell; 8 given off from 7 and anastomosing with 9 to form an areole. Hind wing usually hyaline at base, with vein 5 from the lower angle and fully developed.

Larvæ with 4 pairs of abdominal prolegs.

Key to the Genera.

A. Antennæ of normal length.
  - *a.* Fore wing hooked at outer angle ...... 4. ODONTODES, p. 400.
  - *b.* Fore wing not hooked at outer angle.
    - *a'.* Abdomen smoothly scaled.......... 1. MACEDA, p. 397.
    - *b'.* Abdomen with dorsal tufts on proximal segments .... 2. CYMATOPHOROPSIS, [p. 397.

B. Antennæ very long.
  - *a.* Fore wing of moderate breadth.
    - *a'.* Fore wing with the cilia non-crenulate; frenulum divided in female .. 3. RISOBA, p. 398.
    - *b'.* Fore wing with the cilia crenulate; frenulum single in female.......... 5. STICTOPTERA, p. 400.
  - *b.* Fore wing long and narrow.
    - *a'.* Fore wing extremely long.......... 6. SADARSA, p. 404.
    - *b'.* Fore wing shorter.................. 7. GYRTONA, p. 404.

Genus MACEDA.

Maceda, *Wlk. Cat.* xiii, p. 1140 (1857).
Calduba, *Wlk. Cat.* xv, p. 1815 (1858).

Type, *M. mansueta*, Wlk.
Range. Ceylon; Borneo; N. Australia.

Palpi slender, and reaching just above vertex of head; antennæ ciliated; abdomen with coarse hair on dorsum of proximal segments; tibiæ nearly naked. Fore wing without raised tufts; the apex almost rectangular; male with the retinaculum bar-shaped; the end of the cell rounded and dilated, with a small patch of ribbed hyaline membrane, probably for stridulation with the spines of the mid tarsi. Hind wing with veins 3 and 4 stalked.

2275. **Maceda mansueta**, *Wlk. Cat.* xiii, p. 1141; *Moore, Lep. Ceyl.* iii, pl. 154, figs. 4, 5; *C. & S.* no. 2233.
Calduba obtenta, *Wlk. Cat.* xv, p. 1815.

Rather pale red-brown; abdomen fuscous, with slight white rings. Fore wing with short sub-basal line; oblique nearly straight antemedial line; spot at end of cell; waved postmedial line excurved beyond the cell; a sinuous series of sub-marginal specks. Hind wing fuscous black, with an ill-defined white patch on the disk; the margin white towards anal angle.

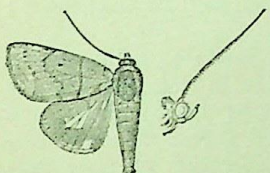



Fig. 219.
Maceda mansueta, ♂. 1/1.

Hab. Ceylon; Andamans; Borneo; N. Australia. *Exp.* 34 millim.

Genus CYMATOPHOROPSIS, nov.

Type, *C. sinuata*, Moore.
Range. Himalayas.

Palpi obliquely upturned, and not reaching vertex of head; antennæ simple in male; metathorax with slight tufts; abdomen with tufts on the two proximal segments; tibiæ moderately hairy. Fore wing with the apex rounded; no raised tufts.

2276. **Cymatophoropsis sinuata**, *Moore, P. Z. S.* 1879, p. 405; *C. & S.* no. 1178.
Risoba confluens, *Moore, Lep. Atk.* p. 92; *C. & S.* no. 1634.

Head and thorax dark red-brown; the collar white; abdomen fuscous. Fore wing black-brown, with a large basal white patch with obliquely waved outer edge and a large brown patch on it; a series of similar marginal spots, the one at apex large, and that at outer angle very large, irregular, and almost joining the basal

patch. Hind wing dark fuscous. Underside with cell-spot and postmedial line to each wing.

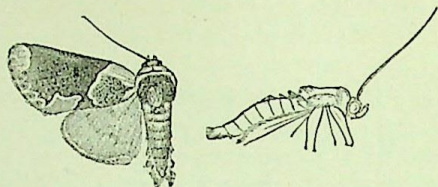



Fig. 220.—*Cymatophoropsis sinuata*, ♂. 1/1.

The form *sinuata* has the collar and patches of fore wing suffused with brown, which in *confluens* are white.

Hab. Simla; Sikhim. *Exp.*, ♂ 34, ♀ 40 millim.

Genus RISOBA.

Risoba, *Moore, P. Z. S.* 1881, p. 328.
Pitrasa, *Moore, Lep. Atk.* p. 94 (1882).

Type, *R. repugnans*, Wlk.

Range. China; throughout India, Ceylon, and Burma; Java; Borneo.

Palpi upturned, and reaching vertex of head; antennæ almost as long as fore wing, with fasciculated cilia in male; thorax and abdomen smoothly scaled, the latter long; tibiæ smooth and without spines. Fore wing without raised tufts; the apex rectangular; the cilia non-crenulate; the retinaculum of male bar-shaped; and the claspers large and elongate.

2277. **Risoba repugnans**, *Wlk. Cat.* ix, p. 9; *Moore, Lep. Ceyl.* iii, pl. 144, fig. 1; *C. & S.* no. 1639.

Head brown; thorax and abdomen brownish white. Fore wing brownish grey; a basal white patch slightly suffused with bright rufous; indistinct waved antemedial, postmedial, and submarginal lines; the orbicular a speck; the reniform white, with rufous centre and edge; a large apical rufous patch with whitish lunule on its inner side; some rufous patches with white edges on outer part of inner margin; a marginal series of dark specks. Hind wing white, with the outer area fuscous; underside with cell-spot.

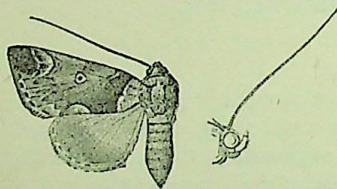



Fig. 221.
Risoba repugnans, ♂. 1/1.

Hab. "N. India"; Nilgiris; Ceylon. *Exp.* 40 millim.

2278. **Risoba obstructa**, *Moore, P. Z. S.* 1881, p. 328; *id. Lep. Ceyl.* iii, pl. 144, figs. 2, 2 *a*, *b* (larva); *C. & S.* no. 1637.
Risoba vialis, *Lep. Atk.* p. 91, pl. 4, fig. 1; *C. & S.* no. 1640.

Risoba prominens, *Moore, P. Z. S.* 1881, p. 329; *C. & S.* no. 1638.

Head and thorax brown; tegulæ whitish. Fore wing whitish, irrorated with brown; an oblique white basal band, the costal area just beyond it red-brown; the reniform round, with a dark speck at centre; a postmedial oblique double line slightly incurved below vein 4, the area beyond it red-brown with traces of a submarginal waved line; some apical dark streaks; a series of marginal brown and white specks. Hind wing semihyaline white, with broad brown marginal band.

Larva purplish brown, palest at sides; dorsal and lateral white speckled lines, a sublateral series of whitish streaks; a series of black dots between the lateral and sublateral lines; a conical prominence on anal somite. Food-plant *Quisqualis*.

Hab. N. China; throughout Peninsular India, Ceylon, and Burma; Malacca; Java. *Exp.* 28–36 millim.

2279. **Risoba diversipennis**, *Wlk. Cat.* xv, p. 1750; *C. & S.* no. 1635.
Risoba basalis, *Moore, Lep. Atk.* p. 91; *C. & S.* no. 1633.

Differs from *obstructa* in the costal area of fore wing being whitish as far as end of cell: a white quadrate spot below the apical brown patch; a crenulate marginal line.

Hab. Sikhim; Khásis; Ceylon; Moulmein; Malacca; Borneo. *Exp.* 36 millim.

2280. **Risoba literata**, *Moore, P. Z. S.* 1881, p. 329; *C. & S.* no. 1636.

Differs from *diversipennis* in the costal area of fore wing not being white; a straight oblique narrow postmedial white band obscuring the postmedial line.

Hab. Sikhim; Nilgiris. *Exp.* 38 millim.

2281. **Risoba variegata**, *Moore, Lep. Atk.* p. 94, pl. 4, fig. 2; *C. & S.* no. 1645.
Pitrasa vitellina, *Moore, Lep. Atk.* p. 94, pl. 4, fig. 3; *C. & S.* no. 1646.

♀. Head and thorax brownish grey. Fore wing olive-yellow, the costa suffused with reddish grey; a black speck at base, with an oblique black and white streak from it; a black speck at lower angle of cell: an oblique postmedial series of dark specks, with a very obscure grey band inside them to lower angle of cell; an obscure apical streak and submarginal line; a marginal series of dark and pale specks. Hind wing pale, with broad fuscous outer band; underside with black lunule at end of cell.

♂. Fore wing purplish ochreous; the disk and outer area suffused with purplish grey; the series of specks developed into an obliquely waved line.

Hab. Sikhim. *Exp.* 38 millim.

Genus **ODONTODES.**

Odontodes, *Guen. Noct.* iii, p. 50 (1852).
Nedroma, *Wlk. Proc. N. H. Soc. Glasgow*, i, p. 353 (1869)
Burdria, *Wlk. Char. Undesc. Het.* p. 50 (1869).

Type, *O. aleuca*, Guen.

Range. W. Africa; throughout India, Ceylon, and Burma; Java.

Antennæ very long and slender; palpi slender and upturned, the 2nd joint reaching vertex of head, the 3rd short; thorax smoothly scaled; abdomen with a tuft on first segment. Fore wing slightly arched towards apex, which is rectangular; the outer angle slightly hooked; slight tufts of raised scales.

2282. **Odontodes aleuca**, *Guen. Noct.* iii, p. 51; *C. & S.* no. 2369.
Briarda bolinoides, *Wlk. Cat.* xv, p. 1802; *C. & S.* no. 2370.
Steiria subfasciata, *Wlk. Cat.* xxxiii, p. 922.
Steiria quadristrigata, *Wlk. Cat.* xxxiii, p. 923.
Odontodes inordinata, *Butl. Ill. Het.* vii, p. 14.
Nedroma ferruginea, *Wlk. Proc. N. H. Soc. Glasgow*, i, p. 353.
Burdria edemoides, *Wlk. Char. Undesc. Het.* p. 50; *C. & S.* no. 2397.

Dark red-brown. Fore wing with short subbasal line; double waved antemedial and waved and curved medial lines; a double dentate postmedial line excurved beyond cell; traces of a dentate submarginal line; the reniform large and indistinct. Hind wing fuscous red-brown, the basal area more or less hyaline, the outer area darkest; the cilia ochreous. Underside with the basal area of both wings pale, with the veins and cell-spot dark brown; the outer area dark brown.

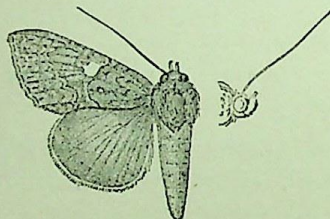



Fig. 222.
Odontodes aleuca, ♂. 1/1.

Some specimens have the fore wing much more variegated, with some white beyond the medial line and in the double ante- and postmedial lines; others have the reniform white, and others a broad pale fascia on inner margin to the postmedial line or outer angle; others, again, are pale with a broad black fascia from the base below cell, or the medial line may be inwardly bordered by black.

Hab. W. Africa; throughout India and Burma. *Exp.* 48 millim.

Genus **STICTOPTERA.**

Stictoptera, *Guen. Noct.* iii, p. 51 (1852).
Dandaca, *Wlk. Cat.* ix, p. 149 (1856).
Steiria, *Wlk. Cat.* xiii, p. 1135 (1857).
Ægilia, *Wlk. Cat.* xiii, p. 1138.
Minica, *Wlk. Cat.* xiii, p. 1139.

Type, *S. cucullioides*, Guen.

Range. Neotropical, Ethiopian, Oriental, and Australian regions.

Palpi slender and nearly naked, the 2nd joint reaching vertex of head, the 3rd long; antennæ very long and slender; thorax smoothly scaled; abdomen with dorsal tufts on proximal segments; tibiæ slightly hairy. Fore wing rather long and narrow, with the cilia crenulate; a small tuft of raised scales on the reniform. Frenulum of male very strong; single in female.

SECT. I. Fore wing of male produced at apex.

2283. **Stictoptera cucullioides**, *Guen. Noct.* iii, p. 52.
Dandaca columba, *Wlk. Cat.* ix, p. 149; *C. & S.* no. 1791.
Steiria subobliqua, *Wlk. Cat.* xiii, p. 1136; *Moore, Lep. Ceyl.* iii, pl. 159, figs. 4, 4 *a* (larva); *C. & S.* no. 2365.
Minica confluens, *Wlk. Cat.* xiii, p. 1140.
Steiria signifera, *Wlk. Cat.* xiii, p. 1136.
Steiria humeralis, *Wlk. Journ. Linn. Soc.* vii, p. 174.
Steiria ferrifera, *Wlk. Journ. Linn. Soc.* vii, p. 173.
Minica semialba, *Wlk. Journ. Linn. Soc.* vii, p. 175.
Minica nigrilinea, *Wlk. Journ. Linn. Soc.* vii, p. 176.
Stictoptera grisea, *Moore, P. Z. S.* 1867, p. 67; *C. & S.* no. 2362.
Briarda conturbata, *Wlk. Proc. Nat. Hist. Soc. Glasg.* i, p. 354.
Steiria variabilis, *Moore, Lep. Atk.* p. 164; *C. & S.* no. 2367.

♂. Head and thorax grey-brown; abdomen fuscous. Fore wing grey-brown, with numerous indistinct waved lines; the orbicular and reniform stigmata indistinct, the latter with a few raised scales on it; a series of small marginal lunules. Hind wing opalescent hyaline; the veins and broad outer band fuscous; the cilia pale.

The first set of forms is small: *cucullioides* having the ground-colour of fore wing rufous, with a grey fascia from base to outer margin occupying the greater part of the wing, this fascia in another form being ochreous white; in *subobliqua* = *humeralis* the basal half is ochreous, with black streaks on it as far as an oblique medial line, the outer area being greyer or in specimens from W. Africa very dark, and the hyaline area of hind wing reduced. In *variabilis* this basal area is pale or dark rufous, and there are dark submarginal marks; in *confluens* the basal area is smoky black; *signifera* is more uniformly variegated with rufous; *columba* is green with rufous spots and with a large subbasal rufous patch.

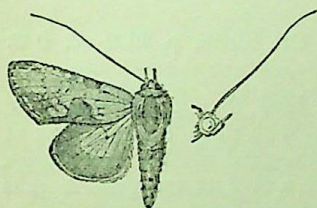



Fig. 223.
Stictoptera cucullioides, ♂. ½.

The second set of forms is larger: *grisea* being grey marked with rufous; *ferrifera* with a dark spot beyond the postmedial line; *semialba* with white blotches on the basal half; whilst in a Simla specimen the thorax is very dark with the patagia ochreous; the

fore wing reddish ochreous, suffused with dark red-brown especially at apex and outer angle.

Larva dusky olive-green; the head and anal somites yellowish; 2nd and 5th somites ochreous above; dusky dorsal and subdorsal bands and a sublateral series of black spots. Food-plant *Garcinia*.

Hab. W. Africa; throughout India, Ceylon, and Burma; Singapore; Java. *Exp.*, ♂ 44–54, ♀ 36–46 millim.

2284. **Stictoptera striata**, n. sp.

♂. Red-brown. Fore wing with longitudinal narrow dark streaks on the costal area; an irregularly sinuous pale submarginal line with an ill-defined blackish fascia from below its centre to inner margin near base; a marginal series of dark striæ. Hind wing opalescent hyaline; the veins, inner and outer areas fuscous.

Hab. Sikhim, 6000 feet (*Möller*). *Exp.* 50 millim. Type in coll. Elwes.

2285. **Stictoptera describens**, *Wlk. Cat.* xiii, p. 1139; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 11; *C. & S.* no. 2383.
Lophoptera xylinata, *Wlk. Cat.* xxxiii, p. 920; *C. & S.* no. 2381.

Ferruginous brown. Fore wing with numerous indistinct very oblique ferruginous lines on basal area; a more distinct lunulate postmedial line; a whitish submarginal waved line. Hind wing with the basal central area opalescent semihyaline; the veins, costa, outer and inner areas fuscous. The form *xylinata* has fuscous blotches on fore wing.

Hab. Canara; Ceylon. *Exp.* 46 millim.

2286. **Stictoptera denticulata**, *Wlk. Cat.* xxxiii, p. 919; *C. & S.* no. 2361.

♀. Differs from *describens* in the head, thorax, and fore wing being pale ochreous brown; the last with some black specks at lower angle of cell, and with the submarginal whitish line absent. Underside ochreous and whitish, with a distinct marginal fuscous band to both wings.

Hab. Moulmein. *Exp.* 34 millim.

2287. **Stictoptera trajiciens**, *Wlk. Cat.* xiii, p. 1137; *Moore, Lep. Ceyl.* iii, pl. 158, fig. 12; *C. & S.* no. 2366.
Steiria æquilinea, *Wlk. Journ. Linn. Soc.* vii, p. 174.

Head and thorax dark red-brown; abdomen paler. Fore wing dark red-brown suffused with greenish grey, especially on costal area; numerous erect indistinct waved lines; an erect postmedial line joined below cell by a curved line from the costa; an

indistinct irregularly dentate submarginal line. Hind wing iridescent-hyaline: the veins and outer area fuscous.

Hab. Ceylon; Borneo. *Exp.* 38 millim.

2288. **Stictoptera illucida**, *Wlk. Cat.* xxxiii, p. 918; *C. & S.* no. 2363.

Stictoptera olivascens, *Moore, Lep. Atk.* p. 164; *C. & S.* no. 2264.

Differs from *trajiciens* in the fore wing being without the greenish-grey suffusion; double subbasal, ante- and postmedial fulvous waved lines, and single medial and submarginal lines: a leaden-grey band between the postmedial and submarginal bands, and some leaden grey on apical part of margin; the reniform large. Hind wing with the inner area fuscous. Some specimens have an ochreous patch at base of fore wing, others a ferruginous patch on central inner area.

Hab. Formosa; Punjab; Ganjam; Moulmein. *Exp.* 34 millim.

2289. **Stictoptera albodentata**, *Moore, Lep. Atk.* p. 165; *C. & S.* no. 2373.

Gyrtona chalybea, *Butl. P. Z. S.* 1883, p. 163; *C. & S.* no. 2374.

Differs from *illucida* in being dark fuscous brown; the lines of fore wing less distinct; no leaden band: a waved line just inside the margin often with minute white specks on it.

One specimen has the ground-colour pale greenish.

Hab. N.W. Himalayas; Sikhim; Khásis; E. Pegu. *Exp.* 28 millim.

SECT. II. Fore wing of male somewhat broader.

2290. **Stictoptera anthyalus**, *Swinh. MS.*

Greyish fuscous brown. Fore wing with double subbasal, ante- and postmedial waved lines; the medial area suffused with fuscous, and with dark striæ in and below cell; two submarginal single waved lines, the inner dark at costa. Hind wing fuscous, without hyaline.

Hab. Khásis; Ganjam. *Exp.* 34 millim. Type in B. M.

2291. **Stictoptera costata**, *Moore, Lep. Ceyl.* iii, p. 123, pl. 159, fig. 8; *C. & S.* no. 2380.

Head and thorax dark red-brown; abdomen fuscous. Fore wing grey, with a black-brown costal fascia widest at middle; the inner area irrorated with black-brown; double subbasal, ante- and postmedial waved lines and single medial and two submarginal lines. Hind wing dark fuscous, with slight traces of hyaline on the disk between the veins.

Hab. N.W. Himalayas; Ceylon. *Exp.* 42 millim.

Genus SADARSA.

Sadarsa, *Moore, Lep. Atk.* p. 164 (1882).

Type, *S. longipennis*, Moore.
Range. Sikhim.

Palpi of moderate length, slender, and obliquely porrect; a sharp frontal tuft; antennæ minutely ciliated in male; a slight tuft behind the collar, and paired tufts on metathorax; abdomen with small dorsal tufts on first three segments; tibiæ naked. Fore wing very long and narrow; the apex produced; the outer margin oblique, and with slight tufts of raised scales. Hind wing ample; the outer margin excised below apex; veins 3, 4, 5 from close to lower angle of cell.

SECT. I. Fore wing with the apex moderately produced and rounded.

2292. **Sadarsa tenuis**, *Moore, P. Z. S.* 1867, p. 60; *C. & S.* no. 2372.

♂. Dark purplish red-brown. Fore wing with numerous indistinct extremely oblique waved lines; the outer area without the purplish tinge. Hind wing with the basal area pale and semihyaline; the veins and outer area fuscous.

Hab. Sikhim. *Exp*. 40 millim.

SECT. II. Fore wing with the apex extremely produced and acute.

2293. **Sadarsa longipennis**, *Moore, Lep. Atk.* p. 165, pl. 5, fig. 14; *C. & S.* no. 2371.

♂. Fuscous brown. Fore wing with numerous indistinct

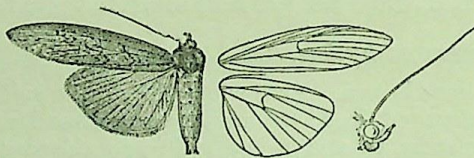



Fig. 224.—*Sadarsa longipennis*, ♂. ½.

oblique waved lines. Hind wing with the basal area pale and semihyaline; the veins and outer area fuscous.

Hab. Sikhim. *Exp*. 46 millim.

Genus GYRTONA.

Gyrtona, *Wlk. Cat.* xxvii, p. 89 (1863).
Clina, *Wlk. Cat.* xxxi, p. 257 (1864).

Type, *G. proximalis*, Wlk., from Borneo.
Range. W. Africa; throughout India, Ceylon, and Burma; Borneo.

Differs from *Stictoptera* in the palpi being porrect and more hairy; a large frontal tuft; antennæ with long cilia in male; abdomen without dorsal tufts. Fore wing with slight raised tufts at middle and end of cell.

2294. **Gyrtona hylusalis**, *Wlk. Cat.* xxvii, p. 93; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 18; *C. & S.* no. 2376.
Gyrtona nigrocinerea, *Wlk. Cat.* xxvii, p. 94.
Gyrtona dorsifascialis, *Wlk. Cat.* xxvii, p. 95.
Gyrtona strenualis, *Wlk. Cat.* xxvii, p. 96.
Gyrtona monilialis, *Wlk. Cat.* xxvii, p. 97.
Gyrtona phycisoides, *Moore, Lep. Ceyl.* iii, p. 125, pl. 158, fig. 8; *C. & S.* no. 2378.
Nephopteryx demptella, *Wlk. Cat.* xxxv, p. 1721.
Nephopteryx acisalis, *Wlk. Cat.* xxvii, p. 66; *C. & S.* no. 4649.
Gyrtona thoracia, *Wlk. Cat.* xxvii, p. 96; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 19; *C. & S.* no. 2379.
Othora subfasciata, *Wlk. Cat.* xxxiii, p. 907; *C. & S.* no. 2375 (part.).

Dark or pale red-brown. Fore wing with indistinct double waved subbasal, ante- and postmedial dark lines; some tufts of raised scales on the antemedial line and on reniform. Hind wing dark fuscous brown.

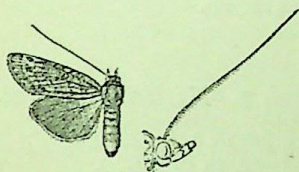



Fig. 225.
Gyrtona hylusalis, ♂. ½.

Some specimens have grey patches on the inner area of fore wing before the ante- and postmedial lines; others have the basal and some the inner area ochreous; in *thoracia* the thorax is pale, the basal area of fore wing almost black, the outer area ochreous white, blackish at outer angle.

Hab. Nilgiris; Ceylon. *Exp.* 18–30 millim.

2295. **Gyrtona plumbeifascia**, n. sp.

♀. Head, thorax, and abdomen fuscous brown. Fore wing rather short and broad, the colour olive-green; a leaden patch at base; an antemedial leaden band, with a waved line and some tufts of raised scales on it, and with a nearly straight indistinct line beyond it; four dark specks near end of cell and a small leaden patch at upper angle; outer area leaden grey, with minutely waved postmedial and two nearly straight submarginal rufous lines. Hind wing dark brown.

Hab. S. Andamans. *Exp.* 22 millim. Type in B. M.

2296. **Gyrtona pusilla**, *Moore, Lep. Atk.* p. 289.

Differs from *plumbeifascia* in being pale greyish brown without the olive tinge. Fore wing without plumbeous markings; the

lines slightly less parallel; traces of a medial band. Hind wing paler; the interspaces more hyaline.

Hab. Accra, W. Africa; Calcutta; Nágas. *Exp.* 22 millim.

2297. **Gyrtona dorsalis**, *Wlk. Cat.* xxvii, p. 98; *Moore, Lep. Ceyl.* iii, pl. 158, figs. 10, 11; *C. & S.* no. 2375.
Othora includens, *Wlk. Cat.* xxxiii, p. 909.
Ariola bryophilina, *Feld. Reis. Nov.* pl. 120, fig. 10.

Differs from *hylusalis* in being larger and pale red-brown; fore wing with the waved lines more indistinct.

In *dorsalis* there are two black patches on the antemedial line of fore wing, whilst *includens* has a large oval antemedial black mark.

Hab. Nilgiris; Ceylon; E. Pegu. *Exp.* 32 millim.

2298. **Gyrtona exsicca**, *Swinh. Trans. Ent. Soc.* 1891, p. 149, pl. 8, fig. 5.

Differs from *hylusalis* in being uniform dull brown; the lines very indistinct; the antemedial line dentate. Hind wing with the basal area semihyaline, the outer fuscous brown.

Hab. S. Canara. *Exp.* 28 millim.

2299. **Gyrtona lapidaria**, *Wlk. Cat.* xxxi, p. 257; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 20; *C. & S.* no. 734.
Clina rufina, *Hmpsn. Ill. Het.* viii, p. 86, pl. 146, fig. 12.
Clina basalis, *Hmpsn. Ill. Het.* viii, p. 86, pl. 146, fig. 5.

Pale ochreous brown. Fore wing with traces of waved lines; some dark submarginal marks and marginal series of black specks. Hind wing fuscous brown.

The form *lapidaria* has a rufous streak on inner margin of fore wing; *rufina* has a dark streak on median nervure, the rufous streak widening to outer margin; in *basalis* the basal area is ochreous, with a large black patch on it, the medial area suffused with fuscous.

Hab. Nilgiris. *Exp.* 24–30 millim.

Subfamily GONOPTERÍNÆ.

Palpi with the 2nd joint straight; abdomen longer than the hind wing, stout and smoothly scaled. Fore wing increasing in width to outer margin; the retinaculum sometimes bar-shaped in male. Hind wing with veins 3, 4 usually stalked, 5 from or from close to lower angle of cell and strongly developed.

Larvæ with the 4 pairs of abdominal prolegs developed, except in *Cosmophila erosa*, which has 3 pairs. Several genera have the thoracic somites very much dilated.

Key to the Genera.

A. Fore wing with veins 8 and 9 anastomosing to form the areole.
- *a.* Hind wing with veins 3 and 4 from cell or hardly stalked.
  - *a'.* Fore wing with the outer margin very obliquely rounded and crenulate .... 3. OSSONOBA, p. 413.
  - *b'.* Fore wing with the outer margin slightly curved.
    - a^{2}. Fore wing with the outer margin evenly curved or angled at vein 3.
      - a^{3}. Fore wing with the areole short .. 1. COSMOPHILA, p. 408.
      - b^{3}. Fore wing with the areole long .. 13. CAREA, p. 421.
    - b^{2}. Fore wing with the outer margin strongly hooked at vein 3.
      - a^{3}. Palpi with the 3rd joint long .... 7. GONIOCRASPIDUM, [p. 416.
      - b^{3}. Palpi with the 3rd joint minute .. 6. OXYGONITIS, p. 415.
- *b.* Hind wing with veins 3, 4 on a long stalk.
  - *a'.* Fore wing with the outer margin evenly curved.
    - a^{2}. Palpi obliquely porrect............ 12. TYMPANISTES, [p. 420.
    - b^{2}. Palpi upturned.
      - a^{3}. Fore wing with vein 6 from above angle of cell, the areole very long. 10. CAPOTENA, p. 419.
      - b^{3}. Fore wing with vein 6 from or from below angle of cell, the areole short.
        - a^{4}. Palpi with the 3rd joint minute. 11. PSEUDELYDNA, [p. 420.
        - b^{4}. Palpi with the 3rd joint well developed .... 9. CHURIA, p. 417.
  - *b'.* Fore wing with the outer margin angled or irregular.
    - a^{2}. Hind wing with a deep indentation in outer margin between veins 1 and 2. 4. ARTHISMA, p. 413.
    - b^{2}. Hind wing with the outer margin evenly curved.
      - a^{3}. Hind wing with the costa arched at base; the tibiæ tufted ...... 5. FALANA, p. 414.
      - b^{3}. Hind wing with the costa evenly curved; the tibiæ naked........ 2. PSEUDOGONITIS, [p. 412.

B. Fore wing with vein 10 anastomosing with 8 and 9 to form the areole.
- *a.* Hind wing with veins 3, 4 from cell, or hardly stalked, 5 from above angle of cell .... 17. GELASTOCERA, [p. 427.
- *b.* Hind wing with veins 3, 4 stalked, 5 from angle of cell or shortly stalked with 3 and 4.
  - *a'.* Fore wing with the outer margin slightly excised below apex, the areole minute .... 18. BEARA, p. 427.
  - *b'.* Fore wing with the outer margin deeply indented below apex, the areole larger.......................... 14. PTYONOTA, p. 424.

C. Fore wing with no areole, veins 8, 9, 10 stalked.
  a. Hind wing with veins 3, 4 stalked; fore wing with the outer margin very irregular .... 15. TORTRICIFORMA, [p. 425.
  b. Hind wing with veins 3, 4 from cell .... 16. TINOSOMA, p. 426.
D. Fore wing with veins 7, 8, 9, 10 stalked .. 8. CLETHROPHORA, [p. 416.

Genus COSMOPHILA.

Cosmophila, *Boisd. Faun. Ent. Mad.* p. 94 (1833).
Lineopalpa, *Guen. Noct.* ii, p. 290 (1852).
Gonitis, *Guen. Noct.* ii, p. 403.
Rusicada, *Wlk. Cat.* xiii, p. 1006 (1857).
Thalatta, *Wlk. Cat.* xiii, p. 996 (1857).
Tiridata, *Wlk. Cat.* xxxiii, p. 870 (1865).
Diremma, *Wlk. Cat.* xxxiii, p. 863.
Phalga, *Moore, P. Z. S.* 1881, p. 375.

Type, *C. erosa*, Hübn.

Range. Nearctic and throughout the tropical and subtropical zones.

Palpi upturned, the 2nd joint reaching vertex of head, the 3rd long and slender; a blunt frontal tuft; antennæ minutely ciliated in male or pectinated; thorax and abdomen smoothly scaled; tibiæ without spines. Fore wing with the apex produced and acute; the outer margin angled or produced to a point in the middle. Hind wing with vein 5 from below centre of discocellulars.

Larvæ with the thoracic somites not swollen.

SECT. I. (*Lineopalpa*). Fore wing long, with the outer margin oblique.

A. *Antennæ of male ciliated.*

2300. **Cosmophila mesogona**, *Wlk. Cat.* xiii, p. 1002; *Moore, Lep. Ceyl.* iii, pl. 153, fig. 8; *C. & S.* no. 2244.

Head and fore wing greyish red-brown; abdomen pale brown. Fore wing varying from greyish red-brown to dark or bright red-brown, striated with grey; a short subbasal line; an antemedial grey and brown line bent outwards at median nervure, then almost straight to inner margin; two black specks at end of cell; a postmedial line angled below costa, then nearly straight to vein 4, where it is recurved to below end of cell, then nearly straight to inner margin; an indistinct diffused submarginal dark shade angled at centre; a marginal rufous line. Hind wing pale brown. Underside with the costa and outer areas of both wings striated with red-brown.

Hab. Throughout India, Ceylon, and Burma; Java. *Exp.* 42–44 millim.

2301. **Cosmophila sabulifera**, *Guen. Noct.* ii, p. 404.
Gonitis involuta, *Wlk. Cat.* xiii, p. 1003; *Moore, Lep. Ceyl.* iii, pl. 153, fig. 7; *C. & S.* no. 2241.
Gonitis basalis, *Wlk. Cat.* xiii, p. 1004.
Gonitis propinqua, *Butl. P. Z. S.* 1884, p. 497.
Tiridata colligata, *Wlk. Cat.* xxxiii, p. 870.

Differs from *mesogona* in the antemedial line of fore wing being bent outwards between vein 1 and inner margin; the postmedial line incurved beyond the cell.

The form *sabulifera* has diffused black on the antemedial line of fore wing and between the postmedial and submarginal lines; a small orbicular spot usually present, and two specks conjoined into a reniform spot; in *involuta* the colouring is similar to *mesogona*.

Hab. Throughout Africa; Aden; India, Ceylon, and Burma. *Exp.* 32–38 millim.

2302. **Cosmophila trilineata**, *Moore, P. Z. S.* 1883, p. 21, pl. 6, fig. 1; *C. & S.* no. 2246.

Differs from *mesogona* in being much redder. Fore wing with straight oblique subbasal and antemedial pale lines; a pale line on discocellulars.

Hab. Bombay. *Exp.* 40 millim.

2303. **Cosmophila fulvida**, *Guen. Noct.* ii, p. 397; *Moore, Lep. Ceyl.* ii, pl. 155, figs. 3, 3 *a* (larva); *C. & S.* no. 2240.
Gonitis metaxantha, *Wlk. Cat.* xiii, p. 1005; *C. & S.* no. 2245.
Gonitis guttanivis, *Wlk. Cat.* xiii, p. 1003.
Gonitis combinans, *Wlk. Cat.* xiii, p. 1001.
Gonitis commoda, *Butl. A. M. N. H.* (5) i, 1878, p. 203.
Gonitis privata, *Wlk. Cat.* xxxiii, p. 863.
Gonitis revocans, *Wlk. Cat.* xv, p. 1794.
Gonitis vulpina, *Butl. Tr. Ent. Soc.* 1886, p. 408.
Gonitis xanthochroa, *Butl. Tr. Ent. Soc.* 1886, p. 409.
Gonitis inducens, *Wlk. Cat.* xiii, p. 1004.
Diremma simulatrix, *Wlk. Cat.* xxxiii, p. 864.
Gonitis albitibia, *Wlk. Cat.* xiii, p. 1001; *C. & S.* no. 2236.
Rusicada nigritarsis, *Wlk. Cat.* xiii, p. 1006; *Moore, Lep. Ceyl.* iii, pl. 155, figs. 2, 2 *a*, *b*, *c*, *d* (larva).

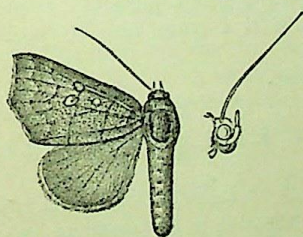



Fig. 226.
Cosmophila fulvida, ♂. 1/1.

Head and thorax bright or dark ferruginous red-brown; abdomen reddish fuscous; fore tibia and 1st joint of tarsus white. Fore wing bright or dark ferruginous or yellowish red-brown; a short subbasal line; an antemedial line oblique from costa to below cell, then waved to inner margin; the orbicular a white speck; the reniform indistinct and often reduced to two spots or to one white or dark spot at lower angle of cell; a

postmedial line waved from costa to vein 4, then excurved to lower angle of cell and waved to inner margin; a waved submarginal diffused line. Hind wing varies in colour from vinous red to dark brown, sometimes pale at base.

The form *metaxantha* is dark vinous red, with yellow patches below base and end of cell of fore wing; *xanthochroa* is a yellowish form; *albitibia* is dark red-brown or yellowish brown; the hind wing very dark.

Larva with 4 pairs of abdominal prolegs, a few short black hairs; colour black above, olive-yellow beneath; a subdorsal series of short transverse yellow streaks with a series of yellow specks above them; the stigmata black; head and legs pale red. In the form *albitibia* the larva is olive-green or grey, with dorsal and lateral yellow or whitish longitudinal lines; each somite dotted with black. Food-plant *Waltheria indica*.

Hab. Japan; China; throughout India, Ceylon, and Burma; Java; Australia; Solomons; Fiji; Samoa. *Exp.* 54 millim.

2304. **Cosmophila lineosa,** *Wlk. Cat.* xxxiii, p. 862; *C. & S.* no. 2243.

Differs from the form *albitibia* in the antemedial line of fore wing being oblique from the costa to median nervure, where it is bent outwards, then straight to inner margin.

Hab. Sikhim; Nágas; Nilgiris. *Exp.* 54 millim.

2305. **Cosmophila horsfieldii,** *Guen. Noct.* ii, p. 291.

Briarda varians, *Moore, P. Z. S.* 1867, p. 66, pl. 6, fig. 12; *C. & S.* no. 2341.

Dark chocolate; the abdomen fuscous. Fore wing with waved subbasal and antemedial lines on pale bands; the reniform with pale edges and constricted at centre; a postmedial slightly waved line on a pale band excurved beyond cell; a submarginal ochreous band suffused with white scales, sending a projection to the centre of outer margin and with dark spots and a patch towards inner margin. Hind wing purplish fuscous brown; the cilia chocolate; underside irrorated with white, and with a crenulate postmedial line.

In some specimens there is a large white patch on and beyond the reniform, and a white streak on vein 1 from base to postmedial line.

Hab. Sikhim; Java. *Exp.* 44 millim.

*2306. **Cosmophila sinuosa,** *Moore, P. Z. S.* 1881, p. 375, pl. 37, fig. 7; *C. & S.* no. 2224.

Brownish ochreous. Fore wing with an indistinct waved antemedial line; a treble postmedial line and single submarginal line; the reniform ochreous. Hind wing with marginal lunulate line and some streaks above anal angle.

Hab. Sikhim. *Exp.* 34 millim.

B. (Cosmophila). *Antennæ of male ciliated and with bristles or bipectinated, the branches short and with bristles from their ends.*

2307. **Cosmophila erosa,** *Hübn. Zutr. Samml. exot. Schmett.* ii, 19, figs. 287, 288.
Cosmophila xanthindyma, *Boisd. Faun. Ent. Mad.* 94, pl. 13, fig. 7; *Moore, Lep. Ceyl.* iii, pl. 155, figs. 1, 1 *a*, *b* (larva); *C. & S.* no. 2234.
Cosmophila indica, *Guen. Noct.* ii, p. 396.
Cosmophila auragoides, *Guen. Noct.* ii, p. 397.
Cirrœdia variolosa, *Wlk. Cat.* xi, p. 750.
Cirrœdia edentata, *Wlk. Cat.* xi, p. 750.

♂. Head and thorax orange-yellow, irrorated with brown; abdomen brown above. Fore wing fuscous, suffused with purple-grey; a large yellow patch irrorated with red occupying the whole basal half of wing except the inner margin; irregular ante- and postmedial red lines meeting at inner margin, the latter produced to an irregular angle beyond the lower angle of cell, then excurved to its lower angle; a white speck in cell; a dentate submarginal line, the area beyond it brown; the cilia white at tips. Hind wing dark fuscous; the cilia white at tips. Underside of fore wing with the costal and outer area pale, speckled with red; hind wing pale, the costal area speckled with red.

♀. Bright orange-yellow; fore wing slightly red-speckled and with slight purplish suffusion below the postmedial line; the cilia white at tips.

Larva. With three pairs of abdominal prolegs. Grass-green, with dorsal and lateral series of minute white specks; the prolegs reddish. Food-plant *Hibiscus.*

Hab. United States; W. Indies; S. Africa; Madagascar; Mauritius; throughout the Oriental region; Australia. *Exp.* 38 millim.

SECT. II. (*Thalatta*). Fore wing shorter, the outer margin less oblique; palpi with the 3rd joint very long.

2308. **Cosmophila precedens,** *Wlk. Cat.* xii, p. 996; *C. & S.* no. 2252.
Thalatta modesta, *Moore, P. Z. S.* 1883, p. 22; *id. Lep. Ceyl.* iii, pl. 153, figs. 5, 6; *C. & S.* no. 2251.
Thalatta albiorbis, *Moore, P. Z. S.* 1883, p. 22; *C. & S.* no. 2249.

Purplish red-brown. Fore wing with oblique slightly sinuous antemedial line; an almost straight postmedial line with ochreous outer edge; a sinuous submarginal series of dark or grey specks; a prominent white spot at centre of cell, absent in the form *modesta.* Hind wing dark fuscous.

Hab. Moulmein; Nilgiris; Ceylon. *Exp.* 30 millim.

2309. **Cosmophila fasciosa,** *Moore, Lep. Atk.* p. 154, pl. 5, fig. 2; *C. & S.* no. 2250.

Differs from *precedens* in being darker with a purple suffusion.

Fore wing with antemedial and medial obscure sinuous diffused dark lines; the postmedial line indistinct rufous and sinuous beyond the cell.

Hab. Sikhim; Khásis; Tenasserim. *Exp.* 30 millim.

Genus PSEUDOGONITIS, nov.

Type, *P. brunnea*, Moore.

Range. Calcutta; Moulmein; Singapore; Borneo.

Differs from the *Lineopalpa* group of *Cosmophila* in the hind wing having vein 5 from the lower end of cell, 3 and 4 stalked.

2310. **Pseudogonitis brunnea**, *Moore, Lep. Atk.* p. 153; *C. & S.* no. 2237.

Gonitis diversalis, *Moore, P. Z. S.* 1883, p. 21; *C. & S.* no. 2238; *Waterh. Aid,* ii, pl. 150, fig. 2.

♂. Ochreous brown. Fore wing with obliquely waved antemedial line, the area beyond it clouded with fuscous; a dark lunule on discocellulars; a dentate postmedial line, incurved below angle of cell; a submarginal series of dark spots. Hind wing fuscous brown; the cilia red-brown.

♀. Dark chestnut-red. Fore wing without fuscous suffusion; an ochreous spot instead of the dark lunule at end of cell. Hind wing much darker; a patch of red at centre of cilia.

Hab. Calcutta; Singapore; Borneo. *Exp.* 42 millim.

2311. **Pseudogonitis latimargo**, *Wlk. Cat.* xiii, p. 1002; *C. & S.* no. 2242.

♀. Differs from *Cosmophila fulvida* in the 3rd joint of palpi being slightly longer; head and thorax dark chocolate. Fore wing

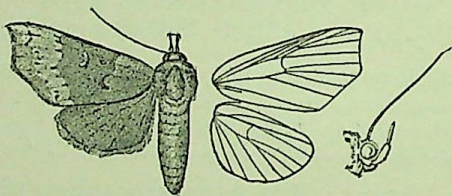



Fig. 227.—*Pseudogonitis latimargo*, ♀. ½.

dark chocolate, with the postmedial line crenulate and not recurved to lower angle of cell; the area beyond it suffused with grey to the submarginal line, which is represented by a series of grey specks. Underside: the outer area of both wings is suffused with grey.

Hab. Moulmein. *Exp.* 44 millim.

Genus OSSONOBA.

Ossonoba, *Wlk. Cat.* xxxv, p. 1966 (1866).

Type, *O. torpida*, Wlk.
Range. Sikhim; Burma.

Palpi nearly naked, the 2nd joint reaching vertex of head, the 3rd long. Antennæ of male bipectinated to the apex, the branches short; thorax and abdomen smoothly scaled, the latter very long and with slight lateral and anal tufts. Tibiæ hairy; mid tarsi with tuft on 2nd joint; hind tarsi with tuft on 1st joint and large tuft on 2nd joint. Fore wing long and narrow; the costa arched towards apex; the outer margin obliquely curved, with the cilia crenulate; the inner margin lobed near base.

2312. **Ossonoba torpida**, *Wlk. Cat.* xxxv, p. 1966; *Butl. Ill. Het.* vi, pl. 106, fig. 8; *C. & S.* no. 2253.

♂. Purplish red-brown. Fore wing with erect antemedial pale line; a minute white speck in cell; traces of a medial angulated line; a pale postmedial line, very highly angled below costa, and with some dark blotches beyond its lower half; an indistinct apical

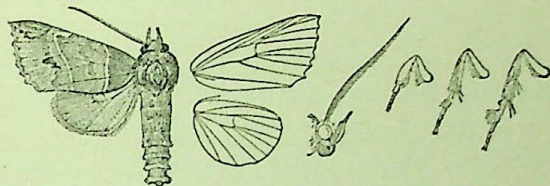



Fig. 228.—*Ossonoba torpida*, ♂. 1/1.

streak; the veins paler towards outer margin. Hind wing paler and redder; the underside purplish with the inner area pale; a white speck at end of cell; diffused ante- and postmedial lines and waved medial line.

♀. More purplish, and without the dark marks beyond postmedial line.

Hab. Sikhim; E. Pegu. *Exp.* 40 millim.

Genus ARTHISMA.

Arthisma, *Moore, P. Z. S.* 1883, p. 20.

Type, *A. scissuralis*, Moore.
Range. Burma; Singapore.

Palpi upturned and naked, the 2nd joint reaching vertex of head, the 3rd long; antennæ minutely ciliated in male; thorax and abdomen smoothly scaled; tibiæ naked. Fore wing with the apex acute; the outer margin angled at vein 4, then oblique and crenulate to outer angle. Hind wing with a deep indentation of

the outer margin between veins 1 *b* and 2 ; veins 3 and 4 stalked, 5 from lower angle of cell.

2313. **Arthisma scissuralis**, *Moore, P. Z. S.* 1883, p. 20 ; *Waterh. Aid,* ii, pl. 150, fig. 3 ; *C. & S.* no. 2235.

Bright red or brownish ochreous. Fore wing with a yellow antemedial spot below the cell ; an indistinct speck in the cell and

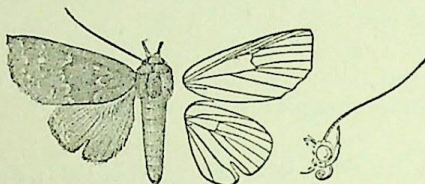



Fig. 229.—*Arthisma scissuralis*, ♂. 1/1.

one at each angle ; an ill-defined postmedial series of yellow lunules incurved below end of cell. Hind wing with traces of a medial yellowish band.

Hab. Rangoon ; Bhámo ; Singapore. *Exp.* 40 millim.

Genus FALANA.

Falana, *Moore, Lep. Atk.* p. 153 (1882).

Type, *F. sordida*, Moore.

Range. Sikhim ; Khásis ; Ceylon ; Burma.

Palpi upturned, the 2nd joint reaching vertex of head, the 3rd long and naked ; antennæ bipectinated in male, the branches short ; metathorax with slight tufts ; abdomen with dorsal tuft on first segment, keeled below, with pairs of flattened scale-like plates ; femora with tufts of scales at base ; fore tibiæ fringed with hair ; mid and hind tibiæ with medial and distal tufts. Fore wing with the apex acute ; the outer margin excised below apex, and produced to a rounded lobe at centre and point at vein 2 ; a tuft of scales forming a boss at base above inner margin ; the areole very small ; vein 6 from some way below angle of cell. Hind wing with the costa arched at base ; veins 3, 4 on a short stalk ; 5 from below centre of discocellulars.

2314. **Falana sordida**, *Moore, Lep. Atk.* p. 154 ; *id. Lep. Ceyl.* iii, pl. 155, fig. 4 ; *C. & S.* no. 2248.

Vinous red-brown ; the tuft on hind femora white. Fore wing irrorated with black ; broad ill-defined subbasal and medial purplish bands ; an indistinct antemedial dark line ; hyaline specks at angles of cell ; an indistinct postmedial waved line excurved round cell ; a black subapical spot ; the cilia chestnut. Hind wing dark fuscous ; the cilia chestnut. Underside of fore wing with the

costal and apical areas purplish, speckled with white; the postmedial line developed on costal area; the subapical black spot prominent: hind wing purplish, irrorated with white; a pale and

Fig. 230.—*Falana sordida*, ♂. ½.

dark line from costa irregularly bent out to beyond cell and curved to inner margin; a whitish line on discocellulars; a submarginal line formed of black blotches.

Hab. Sikhim; Khásis; Ceylon; Tenasserim. *Exp.* 36 millim.

Genus OXYGONITIS.

Oxygonitis, *Hmpsn. Ill. Het.* ix, p. 103 (1893).

Type, *O. sericeata*, Hmpsn.

Range. Nágas; Ceylon.

Palpi upturned, the 2nd joint reaching vertex of head, the 3rd minute; antennæ minutely fasciculated in male; thorax and abdomen smoothly scaled. Fore wing produced and acute at apex; the outer margin excised to vein 4, where it is produced to a hook. Hind wing with the anal angle truncate; veins 3, 4 from cell in male, slightly stalked in female; 5 from below centre of discocellulars.

2315. **Oxygonitis sericeata**, *Hmpsn. Ill. Het.* ix, p. 103, pl. 163, fig. 1.

♂. Purplish fuscous. Fore wing with antemedial oblique line waved below costa; the orbicular round and white; the reniform

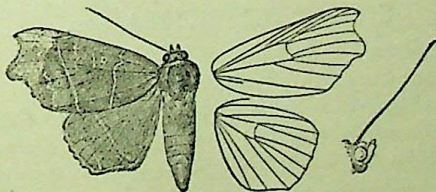



Fig. 231.—*Oxygonitis sericeata*, ♂. ½.

very large and dark; a postmedial brown line curved below costa, then nearly straight to inner margin, with some diffused brown beyond it; a series of submarginal white specks; cilia whitish at

tips. Hind wing dark fuscous, with indistinct oblique medial pale line. Underside grey.

♀. Pale yellowish brown, without purple or fuscous suffusion.

Hab. Nágas; Ceylon. *Exp.* 40–46 millim.

Genus GONIOCRASPIDUM, nov.

Type, *G. ennomoide*, Hmpsn.

Range. N.W. Himalayas.

Differs from *Oxygonitis* in the 3rd joint of the palpi being long; the antennæ of male bipectinated. Fore wing with the hook of outer margin at vein 3; the margin crenulate from the hook to outer angle. Hind wing with veins 3, 4 from angle of cell; 5 from above angle.

2316. **Goniocraspidum ennomoide**, n. sp.

Pale ochreous brown. Head and thorax chestnut. Fore wing slightly irrorated with black; an almost straight ochreous antemedial line; two dark specks at end of cell; a postmedial line angled below costa, then slightly curved to inner margin; traces of a

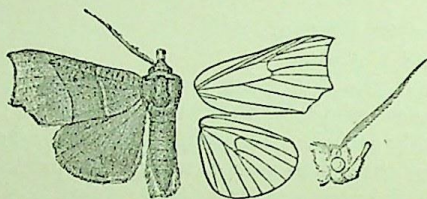



Fig. 232.—*Goniocraspidum ennomoide*, ♂. ½.

diffused dark waved submarginal shade; the cilia chestnut. Hind wing suffused with fuscous; traces of a dark medial line; the cilia chestnut. Underside with the hind wing and costal and outer areas of fore wing grey, striated with black.

Hab. Murree; Dharmsála (*Harford*). *Exp.* 42–46 millim. Type in B. M.

Genus CLETHROPHORA, nov.

Type, *C. distincta*, Leech.

Range. Japan; Sikhim.

Differs from *Oxygonitis* in the 3rd joint of palpi being long; the antennæ of male almost simple. Fore wing with the outer margin hooked or angled at vein 4, then crenulate or excised to outer angle; the retinaculum bar-shaped in male; veins 7, 8, 9, 10 stalked. Hind wing with veins 3, 4, 5 from lower angle of cell.

2317. **Clethrophora distincta**, *Leech, P. Z. S.* 1889, p. 506, pl. 52, fig. 7.

♂. Head, thorax, and fore wing bright bluish or yellowish

grass-green; abdomen deep red. Fore wing with traces of an antemedial curved dark line; a speck at end of cell; a curved pale and dark line from costa just before apex to inner margin beyond

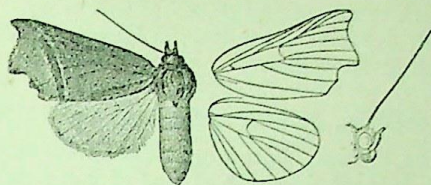



Fig. 233.—*Clethrophora distincta*, ♂. ½.

middle; an indistinct dentate and angled submarginal line. Hind wing deep red. Underside orange-red; the costa of fore wing and the hind wing irrorated with black.

♀ with the abdomen and hind wing much yellower.

Hab. Japan; Sikhim. *Exp.*, ♂ 44, ♀ 54 millim.

Genus CHURIA.

Churia, *Moore, P. Z. S.* 1881, p. 359.

Type, *C. nigrosigna*, Moore.

Range. Himalayas; Assam ranges; Calcutta; Western Ghats; Ceylon.

Palpi upturned, the 2nd joint reaching vertex of head, the 3rd naked and variable in length. Antennæ minutely ciliated in male. Fore wing with the apex somewhat rounded. Hind wing with vein 5 from lower angle of cell; 3 and 4 on a short stalk, or from cell.

SECT. I. Outer margin of both wings not excised below apex.

2318. **Churia arcuata**, *Wlk. Cat.* xii, p. 779; *C. & S.* no. 1803.
Anomis iconica, *Wlk. Cat.* xiii, p. 992; *C. & S.* no. 2239; *Hmpsn. Ill. Het.* ix, pl. 167, fig. 8.
Briarda cervina, *Wlk. Cat.* xxxv, p. 1968; *C. & S.* no. 3010.
Anomis cervina, var. instabilis, *Butl. Ill. Het.* vii, p. 72, pl. 131, fig. 3.
Anomis figlina, *Butl. Ill. Het.* vii, p. 71, pl. 131, fig. 2.

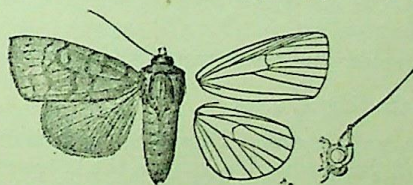



Fig. 234.—*Churia arcuata*, ♂. ½.

Pale red, sometimes purplish. Fore wing with two indistinct waved medial lines, bent outwards at median nervure; two waved postmedial oblique lines reaching the inner margin near outer

angle; a submarginal sinuous series of dark specks. Hind wing pale and semihyaline.

The form *cervina* is pale yellowish brown; some specimens have a prominent dark lunule at end of cell of fore wing.

Hab. Sikhim; Khásis; Khandála; Nilgiris; Ceylon; Rangoon. *Exp.*, ♂ 30–34, ♀ 42 millim.

2319. **Churia ocellata,** *Butl. Ill. Het.* vii, p. 72, pl. 131, fig. 4.

Pale ochreous brown. Fore wing often irrorated with black; a more or less prominent ring-spot at end of cell; traces of antemedial, postmedial, and submarginal waved lines.

Hab. N.W. Himalayas; Nágas. *Exp.* 34 millim.

2320. **Churia maculata,** *Moore, P. Z. S.* 1881, p. 360; *id. Lep. Ceyl.* iii, pl. 150, fig. 7; *C. & S.* no. 1870.

Differs from *ocellata* in having a black speck at end of cell of fore wing, or sometimes ring-spots at middle and end of cell; three submarginal black specks, the two lower sometimes absent; in one specimen the black irroration is very strongly developed.

Hab. Nilgiris; Ceylon. *Exp.* 28 millim.

*2321. **Churia nigrisigna,** *Moore, P. Z. S.* 1881, p. 360, pl. 37, fig. 13; *C. & S.* no. 1871.
Churia ochracea, *Moore, P. Z. S.* 1881, p. 360; *C. & S.* no. 1872.

Differs from *maculata* in being uniform brownish ochreous; fore wing with a black spot at end of cell.

The form *ochracea* is yellower, without the black spot.

Hab. Calcutta. *Exp.* 26 millim.

2322. **Churia lilacina,** n. sp.

♀. Differs from *arcuata* in being grey, slightly suffused with purplish; the abdomen fuscous, with the anal tuft white. Hind wing not semihyaline, but whitish, suffused with fuscous towards outer margin.

Hab. Sikhim, 6000 feet (*Möller*). *Exp.* 34 millim. Type in coll. Elwes.

SECT. II. Outer margin of each wing slightly excised below apex.

2323. **Churia discisigna,** n. sp.

♂. Reddish grey-brown. Fore wing with indistinct dentate antemedial and postmedial black lines, the latter excurved round cell; a black speck in cell and white line on discocellulars; indistinct sinuous rufous medial and submarginal lines, the former excurved round cell. Abdomen and hind wing dark fuscous. Underside with ill-defined curved postmedial line.

Hab. Sikhim (*Elwes*). *Exp.* 42 millim. Type in coll. Elwes.

Genus CAPOTENA.

Capotena, *Wlk. Cat.* xi, p. 714 (1857).
Brada, *Wlk. Cat.* xv, p. 1665 (1858).
Phanaca, *Wlk. Cat.* xxxiii, p. 856 (1865).

Type, *C. apriformis*, Wlk.

Range. Sikhim; Canara; Nilgiris; Ceylon.

Palpi upturned, reaching vertex of head, the 3rd joint minute. Antennæ very long and minutely ciliated. Fore wing long and narrow, the apex rounded; vein 6 given off from the areole, which is long; 7 from just before the end of it. Hind wing with the apex rounded; veins 3 and 4 stalked.

2324. **Capotena truncata,** *Wlk. Cat.* xv, p. 1666; *Moore, Lep. Ceyl.* ii, pl. 122, *figs.* 2 *a, b* (larva); *C. & S.* no. 1119.

Head and thorax chestnut-brown. Fore wing chestnut, with the costa pale; a pale outwardly-oblique antemedial line; a dark speck at end of cell; a slightly curved inwardly-oblique postmedial line; traces of a dark waved submarginal line; abdomen and hind wing dark olive-brown.

Nilgiri specimens have a greyer and more fuscous tone than the Ceylon form.

Larva with the three thoracic somites swollen; two dorsal tubercles on 11th somite. Colour red-brown, the anterior somites olive-brown; a pale-centred double lunulate black dorsal line ending

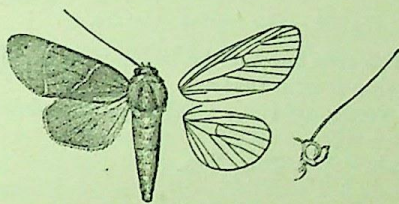



Fig. 235.—*Capotena truncata*, ♂. ½.

as a black band; thoracic somites with black dorsal spots and streaks; pale centred double black lateral paired lines.

Cocoon pale red; compact; with a conical projection at end.

Hab. Sikhim; Nilgiris; Ceylon. *Exp.* 40 millim.

2325. **Capotena apriformis,** *Wlk. Cat.* xi, p. 715.
Phanaca damnipennis, *Wlk. Cat.* xxxiii, p. 857; *C. & S.* no. 2188.

♀. Differs from *truncata* in the head and thorax being black-brown. Fore wing suffused with silvery grey, the costa whitish; the ante- and postmedial lines waved.

The type is from Canara, not Java.

Hab. Canara; Ceylon. *Exp.* 32 millim.

Genus PSEUDELYDNA, nov.

Type, *P. rufoflava*, Wlk.
Range. Himalayas; Canara.

Palpi smooth and upturned, the 3rd joint minute; antennæ very long and fasciculated in male; abdomen very long in male, in which sex the hind tibiæ and tarsi are clothed with long hair on the outer side, the tibia without spurs and with a very long tuft of hair on the inner side. Fore wing narrow, with the apex rounded; the outer margin oblique; veins 8 and 9 anastomosing to form an areole; hind wing with the anal angle produced to a slight point in male; veins 3 and 4 stalked.

2326. **Pseudelydna rufoflava**, *Wlk. Cat.* x, p. 467; *C. & S.* no. 1816.

♂. Head and thorax bright yellow; antennæ fulvous; abdomen fuscous, the anal tuft fulvous. Fore wing bright yellow; a faint subbasal curved line; an oblique antemedial line; a fulvous ring-spot at end of cell; a curved postmedial and waved sub-

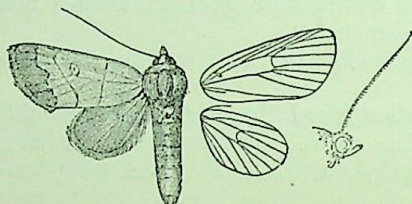



Fig 236.—*Pseudelydna rufoflava*, ♂. ½.

marginal line, the area beyond the latter rufous. Hind wing red, the inner area tinged with fuscous.

♀ with the vertex of thorax fulvous; the abdomen and hind wing paler.

Hab. Almorah. *Exp*. 36 millim.

2327. **Pseudelydna diurna**, *Swinh. P. Z. S.* 1889, p. 412, pl. 43, fig. 10.

Differs from *rufoflava* in the head, thorax, and fore wing being pale brick-red; the antemedial line more curved; hind wing with the inner area not fuscous.

Hab. Sikkim; N. Canara. *Exp*. 36 millim.

Genus TYMPANISTES.

Tympanistes, *Moore, P. Z. S.* 1867, p. 48.

Type, *T. pallida*, Moore.
Range. Dharmsála; Sikhim.

Palpi porrect and smoothly scaled, the 3rd joint long; antennæ of male almost simple. Fore wing produced and acute at apex; neuration normal; hind wing with veins 3 and 4 stalked, 5 from just above lower angle of cell.

Male with the retinaculum bar-shaped; the basal segment of the abdomen with paired sound-producing organs below, consisting of hollow cavities inside each of which a spatulate process strikes on a projecting ridge, a fan of long scales projecting backwards from the surrounding membrane, the sound produced being compared to that of a policeman's rattle; the claspers when exposed surrounded by dense masses of floss-silk.

2328. **Tympanistes rubidorsalis**, *Moore, P. Z. S.* 1888, p. 409; *Butl. Ill. Het.* vii, p. 52, pl. 126, fig. 5.

♂. Head, thorax, and fore wing brownish ochreous; the last with a dark-ringed white spot at end of cell; faint traces of an irregularly waved postmedial line; a series of marginal specks.

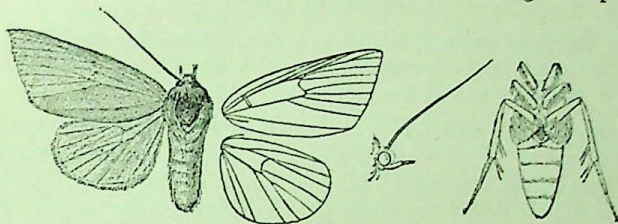



Fig. 237.—*Tympanistes rubidorsalis*, ♂. ½.

Hind wing semihyaline white; the inner area suffused with pinkish red. Abdomen bright red above.

Hab. Dharmsála. *Exp.* 52 millim.

2329. **Tympanistes pallidus**, *Moore, P. Z. S.* 1867, p. 49, pl. 6, fig. 1; *C. & S.* no. 1716.

♂. Differs from *rubidorsalis* in the head, thorax, and fore wing being of a yellowish tinge, the last with no spot at end of cell; a submarginal as well as the postmedial waved line traceable; abdomen not so bright red; hind wing without red on inner area.

Hab. Sikhim. *Exp.* 50 millim.

2330. **Tympanistes testaceus**, *Moore, P. Z. S.* 1867, p. 49, pl. 6, fig. 2; *C. & S.* no. 1717.

♀. Differs from *pallida* in the head, base, and costa of fore wing being green; the ground-colour of fore wing redder; a black spot at end of cell. Hind wing reddish yellow.

Hab. Sikhim. *Exp.* 44 millim.

Genus **CAREA**.

Carea, *Wlk. Cat.* x, p. 474 (1856).
Dabarita, *Wlk. Cat.* x, p. 478.
Ranaja, *Moore, Lep. Atk.* p. 121 (1882).

Type, *C. varipes*, Wlk.

Range. Throughout India, Burma, and Ceylon; Andamans; Malacca; Borneo; Java.

Palpi upturned, reaching vertex of head. Antennæ ciliated in male. Mid tibia with a terminal pair of spurs; hind tibia in male very much shortened, with a minute terminal pair of spurs, and with a tuft of long scales extending from its extremity along the inner side of the first tarsal joint, which is much elongated and swollen. Fore wing with the apex quadrate; vein 6 from angle of cell; 8 and 9 anastomosing to form the areole, which is long. Hind wing with the apex rounded; veins 3 and 4 from angle of cell.

SECT. I. (*Dabarita*). Fore wing with the outer margin angled at vein 4.

2331. **Carea subtilis,** *Wlk. Cat.* x, p. 479; *Moore, Lep. Ceyl.* ii, pl. 123, figs. 3, 3 *a*; *Forsayeth, Trans. Ent. Soc.* 1884, pl. 14, figs. 4, 4 *b* (larva); *C. & S.* no. 1118.

Head, thorax, and fore wing varying from pinkish flesh-colour to red-brown. Fore wing with an outwardly oblique line from the costa before the middle to inner margin beyond the middle; a curved double line from costa before apex to outer angle. Hind wing white, with some pink on outer margin below the apex. Abdomen whitish, the vertex more or less suffused with fuscous and red-brown.

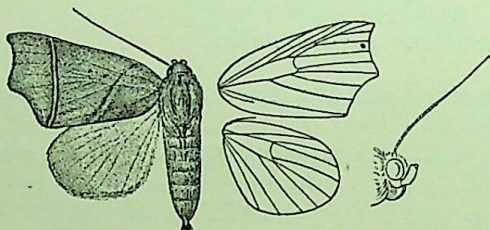



Fig. 238.—*Carea subtilis*, ♂. ½.

Ganjam specimens are very pale, with the markings of fore wing almost obsolete.

Larva. Thoracic somites very much swollen and green; the other somites pale red-brown, with white, reddish, and brown lateral lines; a dorsal tubercle on terminal somite.

Hab. Throughout India and Ceylon; Andamans; Java. *Exp.*, ♂ 36, ♀ 40 millim.

2332. **Carea chlorostigma,** *Hmpsn. Ill. Het.* ix, p. 101, pl. 159, fig. 12.

♂. Head, base of collar, femora, and tibiæ variegated orange and dark ferruginous. Thorax and fore wing greyish red-brown, the latter with very indistinct waved antemedial, postmedial, and submarginal lines; a round dark green spot in middle of cell, an elongate spot below it, and a lunulate spot on discocellulars; a

purplish blotch on costa before the apex; outer margin suffused with chestnut below the apex. Abdomen and hind wing pale reddish brown.

The Sikhim specimen has the green spots large.

Hab. Sikhim; Ceylon. *Exp.* 34 millim.

SECT. II. (*Carea*). Fore wing with the outer margin regularly curved.

2333. **Carea varipes**, *Wlk. Cat.* x, p. 475; *Moore, Lep. Ceyl.* ii, pl. 123, figs. 1, 1 *a*; *C. & S.* no. 1121.
Chora curvifera, *Wlk. Journ. Linn. Soc.* vi, p. 188.
Dabarita rhodophila, *Wlk. Cat.* xxxiii, p. 718.

Head, thorax, and fore wing pale or dark red-brown, or suffused with olive-green. Fore wing with an indistinct curved oblique antemedial line; two dark specks in the end of cell; a curved double line from costa to outer angle; traces of a dark or greyish submarginal line. Hind wing reddish orange; the inner margin whitish or fuscous. Abdomen red-brown or fuscous.

Larva with the thoracic somites very much swollen; an elongated conical tubercle on 11th somite. Colour purplish or greenish olive-brown; a purplish white band from 3rd to 11th somite; head small and red.

Cocoon with a conical projection from the end, compact, and oval.

Hab. Assam; Ceylon; Malacca; Borneo; Java. *Exp.*, ♂ 43, ♀ 48 millim.

2334. **Carea nitida**, n. sp.

♀. Head and thorax dark brown; abdomen paler, with a pink tinge at sides. Fore wing dark red-brown suffused with purplish grey, except the postmedial area; oblique, slightly curved, ante- and postmedial dark lines; an indistinct waved submarginal line. Hind wing bright red, the inner area suffused with fuscous. Underside of fore wing red; hind wing ochreous, irrorated with red.

Hab. Sikhim (*Elwes*). *Exp.* 40 millim. Type in coll. Elwes.

2335. **Carea purpurea**, *Hmpsn. Ill. Het.* viii, 59, pl. 141, figs. 4, 9.

Fore wing with the apex more acute. Head, thorax, and fore wing dark purplish red-brown, the last with a line from the costa before the middle to inner margin beyond the middle; a dark speck at end of cell; a waved slightly oblique postmedial line; a series of submarginal specks. Hind wing pale yellow, suffused with reddish orange towards outer margin. Abdomen reddish fuscous.

Hab. Sikhim; Nilgiris. *Exp.*, ♂ 32, ♀ 40 millim.

2336. **Carea obsolescens**, *Moore, Trans. Ent. Soc.* 1884, p. 356; *C. & S.* no. 1120.

♂. Differs from *purpurea* in the head, thorax, and fore wing being pale reddish chestnut; the last without the dark speck at end of cell; cilia tipped with white. Abdomen and hind wing ochreous, the latter with a reddish tinge towards outer margin.

The Bhután specimen has an indistinct fascia from apex of fore wing.

Hab. Bhután; Mahableshwar; Nilgiris; Ceylon. *Exp.* 43 millim.

2337. **Carea fasciata,** *Moore, Lep. Atk.* p. 121, pl. iv, fig. 18; *C. & S.* no. 1922.

♂. Head and collar chestnut; thorax and abdomen reddish fuscous. Fore wing red-brown, suffused with purplish grey; the basal area and a broad postmedial band deep green; oblique ante- and postmedial and dentate submarginal green lines. Hind wing red, the inner area fuscous.

Hab. Sikhim. *Exp.* 40 millim.

2338. **Carea costiplaga,** *Swinh. A. M. N. H.* (6) xii, p. 262.

♀. Pale reddish grey. Fore wing with a small red-brown antemedial spot on the costa; a large subtriangular patch before the apex; indistinct ante- and postmedial oblique lines; a black speck at end of cell; cilia red-brown. Hind wing reddish orange. Underside reddish orange, with a whitish patch on costa of fore wing before apex; the inner area of hind wing pale.

Hab. Sibsagar. *Exp.* 36 millim.

2339. **Carea fuscomarginata,** n. sp.

♂. Bright chestnut-red. Fore wing with a dark speck at end of cell; antemedial, postmedial, and submarginal indistinct waved lines. Hind wing red; the inner area fuscous.

Hab. Mergui (*Doherty*). *Exp.* 30 millim. Type in coll. Druce.

2340. **Carea albopurpurea,** *Swinh. MS.*

Head and collar ferruginous; thorax whitish; abdomen whitish, suffused with fuscous. Fore wing white, suffused with purple except the apical area; an obliquely waved rufous antemedial line and similar double postmedial line filled in with white, and with a large rufous patch inside it; a submarginal series of rufous specks; cilia rufous from apex to vein 4. Hind wing white; the inner area fuscous.

Hab. Sikhim (*Knyvett*); Khásis (*Hamilton*). *Exp.* 32 millim. Type in B. M.

Genus **PTYONOTA**, nov.

Type, *P. formosa*, Hmpsn.

Range. Tenasserim.

Palpi reaching vertex of head; abdomen with a dorsal fan of scales at base. Fore wing with the apex produced and acute, the outer margin excised below it. Veins 8 and 9 anastomosing to

form the areole, which is long. Hind wing with veins 3 and 4 stalked.

2341. **Ptyonota formosa**, n. sp.

♀. Head rufous; collar black-brown; thorax grey; an ochreous and rufous patch on metathorax; abdomen reddish brown, with the basal tuft pure white. Fore wing grey, with a rufous subbasal band; a sinuous antemedial rufous and grey line, with a large red patch inside it from median nervure to inner margin; a

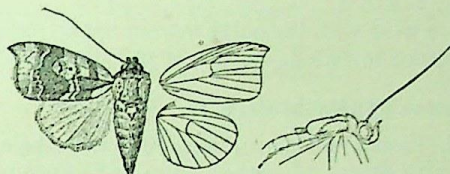



Fig. 239.—*Ptyonota formosa*, ♀. 1/1.

black speck in cell, and lunule on orange spot at end of it: the postmedial area red, with an irregularly waved postmedial dark line on it, and similar submarginal line. Hind wing pale, suffused with red.

Hab. Tenasserim Valley (*Doherty*). *Exp.* 34 millim. Type in coll. Druce.

Genus TORTRICIFORMA, nov.

Type, *T. viridipuncta*, Hmpsn.
Range. Sikhim.

Proboscis fully developed; palpi upturned and smoothly scaled, the 2nd joint reaching vertex of head, the 3rd long. Fore wing with the costa arched at base and excised before the apex; the outer margin excised from the apex to vein 6, where it is produced to an angle and again excurved between veins 4 and 2; veins 6 and 7 from cell; 8, 9, 10 stalked. Hind wing with veins 3 and 4 stalked; 5 from near lower angle of cell; 6 and 7 from upper angle; the costa slightly excised.

2342. **Tortriciforma viridipuncta**, n. sp.

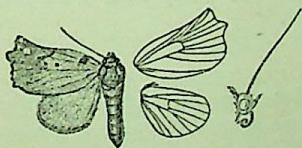



Fig. 240.
Tortriciforma viridipuncta, ♀. 1/1.

♀. Pale reddish. Fore wing slightly irrorated with black scales; a large bright green spot on costa near base, and a comma-shaped spot from costa to upper angle of cell; a black speck on discocellulars. Hind wing orange-red; underside with ferruginous spot at end of cell, and two waved lines beyond it.

Hab. Sikhim (*Knyvett*). *Exp.* 28 millim. Type in coll. Knyvett.

Genus **TINOSOMA**, nov.

Type, *T. hyperythrum*, Hmpsn.

Range. Nágas; Burma; Andamans; Borneo.

Palpi upturned, reaching above vertex of head. Antennæ very long. Abdomen slender and very long. Fore wing long and rather narrow; the costa arched; the inner margin curved; veins 6 and 7 from angle of cell; 8, 9, 10 stalked; hind wing with veins 3 and 4 from cell.

SECT. I. Fore wing with the outer margin hardly excised between the apex and vein 3. Antennæ of male bipectinate.

2343. **Tinosoma hyperythrum**, n. sp.

♂. Head, thorax, abdomen, and fore wing pale red-brown. Fore wing with traces of waved ante- and postmedial lines; a dark dot in end of cell; indistinct submarginal and marginal

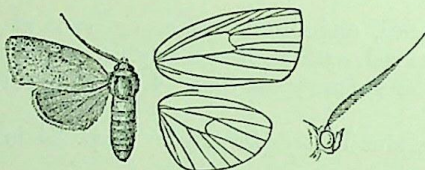



Fig. 241.—*Tinosoma hyperythrum*, ♂. ½.

series of dark dots. Hind wing and underside bright red; the latter with the apex of fore wing pale.

Hab. Nága Hills, 2000 feet (*Doherty*); Andamans; Borneo. *Exp.* 28 millim. Type in coll. Elwes.

SECT. II. Fore wing with the outer margin highly excised between the apex and vein 3. Antennæ of male simple.

2344. **Tinosoma mirabile**, *Swinh. Trans. Ent. Soc.* 1890, p. 237.

♂. Head and thorax pale reddish; abdomen fuscous. Fore wing pale reddish, slightly irrorated with brown; waved ante- and postmedial lines, the latter excurved beyond the cell; a series of black submarginal specks, some brown suffusion at outer angle. Hind wing pale brownish red; underside pale, with indistinct cell-spot and two black subapical spots.

Hab. Rangoon. *Exp.* 20 millim.

SECT. III. Fore wing with the outer margin slightly excised between the apex and vein 3, from thence to outer angle oblique and crenulate. Antennæ of male simple.

2345. **Tinosoma bilinea**, *Swinh. Trans. Ent. Soc.* 1890, p. 237.

♂. Pale reddish brown. Fore wing suffused with purplish and

slightly irrorated with black scales; a curved subbasal line, slightly sinuous antemedial, medial, and postmedial lines, the ante- and postmedial with pale inner edge; a black spot on discocellulars and submarginal series of black specks; a large chestnut medial patch on the costa, and smaller patch on apical part of outer margin. Hind wing orange-red, with a submarginal series of black specks. Underside of fore wing with the disk orange-red; hind wing pale; the costal area irrorated with red-brown; a cell-spot; the submarginal black specks prominent.

Hab. Rangoon; E. Pegu; Tenasserim. *Exp.* 26 millim.

Genus **GELASTOCERA**.

Gelastocera, *Butl. Ann. N. H.* (4) xx, p. 476 (1877).

Type, *G. exusta*, Butl., from Japan.

Range. Japan; Sikhim.

Palpi upturned, reaching above vertex of head, the 3rd joint short. Antennæ bipectinated for two-thirds length in male. Fore wing with the apex rather produced and acute; vein 8 anastomosing with 9 and 10 to form the areole. Hind wing with veins 3 and 4 from cell.

2346. **Gelastocera castanea**, *Moore, Lep. Atk.* p. 71, pl. 3, fig. 9; *C. & S.* no. 1211.

Head, thorax, and fore wing red-brown; the last with very indistinct dusky ante- and postmedial bands; an indistinct fuscous reniform spot; indistinct submarginal and marginal series of dark

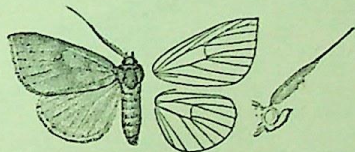



Fig. 242.—*Gelastocera castanea*, ♂. 1/1.

specks. Hind wing white, the apical portion of outer margin with a slight pink tinge. Abdomen fuscous white.

Hab. Sikhim. *Exp.*, ♂ 32, ♀ 40 millim.

Genus **BEARA**.

Beara, *Wlk. Cat.* xxxv, p. 1703 (1866).

Type, *B. dichromella*, Wlk.

Range. Bombay; Nilgiris; Ceylon; Tenasserim; Java.

Palpi upturned, reaching above vertex of head, the 3rd joint rather long. Antennæ minutely ciliated in male. Fore wing with the costa arched, the apex acute, the outer margin excurved; vein 8 anastomosing with 9 and 10 to form the areole, which is very minute. Hind wing with veins 3 and 4 stalked.

2347. **Beara dichromella**, *Wlk. Cat.* xxxv, p. 1703; *Moore, Lep. Ceyl.* ii, pl. 123, figs. 2, 2 *a*; *C. & S.* no. 1212.

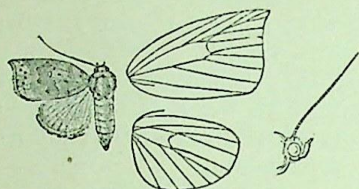



Fig. 243.—*Beara dichromella*, ♂. 1/1.

♂. Head, thorax, and fore wing red-brown, irrorated with fuscous scales; traces of antemedial, postmedial, and submarginal waved lines; a dark speck in cell and spot at end of it; a dark marginal line. Abdomen and hind wing whitish, the latter suffused with reddish at apex.

Hab. Bombay; Nilgiris; Ceylon; Tenasserim. *Exp.* 24 millim.

Subfamily QUADRIFINÆ.

Palpi with the 2nd joint more or less thickened; the scaling rather hairy; the tibiæ very frequently spined, and the tarsal joints short. Fore wing with veins 8 and 9 almost always anastomosing to form an areole. Hind wing with vein 5 fully developed and from or from near lower angle of cell.

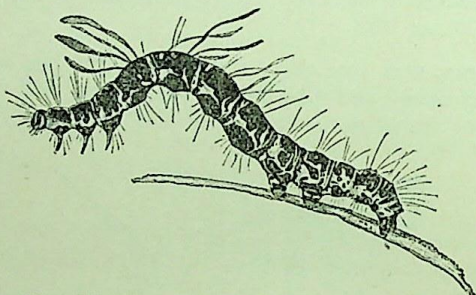



Fig. 244.—Larva of *Tinolius eburneigutta*. 1/1.

Larvæ. Semi-loopers, with either the four pairs of abdominal prolegs fully developed or with the first or first two pairs partially or totally aborted.

Key to the Genera.

A. Proboscis short and weak; the cilia of fore wing strongly toothed .... 1. CETOLA, p. 434.
B. Proboscis fully developed.
  a. Eyes hairy.
    a′. Abdomen without dorsal tufts ...... 2. MOMA, p. 435.
    b′. Abdomen with dorsal tufts .... 3. TRISULOIDES, p. 436.
  b. Eyes naked.
    a′. Hind wing with the cell very short.
      a^2. Mid tibiæ spined.
        a^3. Wings with the cilia crenulate .... 13. ANISONEURA, p. 455.
        b^3. Wings with the cilia non-crenulate . 17. AGONISTA, p. 463.

b^2. Mid and hind tibiæ spined .... 15. NYCTIPAO, p. 458.
c^2. Tibiæ not spined.
a^3. Fore wing with the apex not falcate.
a^4. Fore wing with the cilia crenulate . 14. SPIREDONIA, p. 457.
b^4. Fore wing with the cilia non-crenulate .... 81. CALESIA, p. 579.
b^3. Fore wing with the apex more or less falcate.
a^4. Hind wing with the outer margin more or less angled .... 16. HYLODES, p. 462.
b^4. Hind wing with the outer margin rounded .... 55. ISCHYJA, p. 537.
c^4. Hind wing with the outer margin nearly straight .... 56. PLATYJA, p. 539.
b'. Hind wing with the cell of normal length.
a^2. Abdomen with large anal tuft; the wings produced at apex; hind wing with the outer margin straight; the anal angle lobed .... 57. IONTHA, p. 541.
b^2. Hind wing ample, the apex produced, a large tuft of hair on inner margin; hind legs with immensely developed tufts of hair .... 58. CRITHOTE, p. 541.
c^2. Shape sphingiform; the abdomen long. Fore wing long and produced at apex .... 32. SPHINGOMORPHA, [p. 490.
d^2. Fore wing with the costa highly arched, the apex produced, the outer and inner margins forming a continuous curve . 72. PHYLLODES, p. 557.
e^2. Fore wing with the apex produced upwards to a slight lobe and cut off square to centre of outer margin, which is much angled .... 67. LYCIMNA, p. 550.
f^2. Shape and appearance normal.
a^3. Abdomen uniformly clothed with long woolly hair; males with a chitinous rasp on dorsum .... 28. ARCTE, p. 485.
b^3. Abdomen with prominent dorsal tufts.
a^4. Fore wing with a tooth of scales at outer angle.
a^5. Thorax with a large spreading tuft on vertex.
a^6. Fore wing without raised tufts of scales .... 77. PLUSIA, p. 567.
b^6. Fore wing with raised tufts of scales .... 78. ABROSTOLA, p. 577.
b^5. Thorax without a large spreading tuft on vertex.
a^7. Fore wing with the cilia crenulate .... 8. ERYGIA, p. 444.
b^7. Fore wing with the cilia non-crenulate.
a^8. Fore wing with the apex rectangular .... 27. MOSARA, p. 485.
b^8. Fore wing with the apex rounded .... 7. BATRACHARTA, p. 443.

b^4. Fore wing with no tooth of scales at outer angle.
a^5. Thorax quadrately scaled, the metathorax tufted .... 9. SYPNA, p. 446.
b^5. Thorax not quadrately scaled.
a^6. Mid tibiæ spined .... 19. HOMOPTERA, p. 474.
b^6. Mid tibiæ not spined.
a^7. Palpi clothed with hair, the 2nd joint not flattened.
a^8. Thorax with a high sharp crest. 31. COARICA, p. 489.
b^8. Thorax without a high crest.
a^9. Metathorax tufted.
a^{10}. Palpi upturned .... 30. MITHILA, p. 488.
b^{10}. Palpi obliquely porrect .... 20. PANILLA, p. 476.
b^9. Metathorax not tufted.
a^{10}. Fore wing with the costa arched towards apex.
a^{11}. Fore wing with vein 10 given off from the areole. 18. POLYDESMA, p. 465.
b^{11}. Fore wing with vein 10 given off after the areole. 80. TINOLIUS, p. 578.
b^{10}. Fore wing with the costa nearly straight; abdomen with strong ridges and tufts of hair .... 26. CATEPHIA, p. 481.
b^7. Palpi smoothly scaled, the 2nd joint wide and flattened, the 3rd long .... 59. HARMATELIA, p. 542.
c^3. Abdomen without prominent dorsal tufts.
a^4. Mid tibiæ without spines.
a^5. Fore wing with the outer margin not angled.
a^6. Fore wing with the costa moderately arched.
a^7. Mid and hind tibiæ with tufts of spinous hair .... 21. MELIPOTIS, p. 477.
b^7. Mid and hind tibiæ without tufts of spinous hair.
a^8. Palpi with the 3rd joint upturned, no frontal tuft.
a^9. Palpi with the 2nd joint clothed with hair.
a^{10}. Fore wing broad.
a^{11}. The scaling hairy and rough. 4. TRISULA, p. 437.
b^{11}. The scaling smooth.
a^{12}. Fore wing with the apex acute and slightly produced .... 45. BANIANA, p. 513.
b^{12}. Fore wing with the apex rectangular.
a^{13}. Hind wing with vein 5 from above lower angle of cell .... 47. PLECOPTERA, p. 518.
b^{13}. Hind wing with vein 5 from lower angle of cell. 46. BORSIPPA, p. 516.
b^{10}. Fore wing narrow.

a^{11}. Fore wing with the apex rectangular .... 23. LYNCESTIS, p. 479.
b^{11}. Fore wing with the apex rounded .... 6. PHORICA, p. 443.
b^{9}. Palpi with the 2nd joint smoothly scaled.
a^{10}. Palpi with the 2nd joint not reaching above vertex of head.
a^{11}. Abdomen with strong ridges of coarse hair .... 29. CYCLODES, p. 487.
b^{11}. Abdomen without strong ridges of coarse hair.
a^{12}. Fore wing increasing in width to outer margin; the abdomen rounded.
a^{13}. Palpi with the 2nd joint reaching vertex of head, the 3rd long.
a^{14}. Fore wing with the apex rounded .... 35. CHRYSOPERA, p. 493.
b^{14}. Fore wing with the apex rectangular .... 51. FODINA, p. 529.
b^{13}. Palpi with the 2nd joint not reaching vertex of head, the 3rd short.
a^{14}. Fore wing with the inner margin not lobed at base and without tuft of hair at outer angle .... 34. BRANA, p. 492.
b^{14}. Fore wing with the inner margin lobed at base and with tuft of hair at outer angle .. 75. PSEUDOCALPE, p. 566.
b^{12}. Fore wing of nearly even width throughout; the abdomen flattened .... 38. ISOURA, p. 506.
b^{10}. Palpi with the 2nd joint reaching above vertex of head, the 3rd long.
a^{11}. Fore wing with the apex falcate .... 44. SYMPIS, p. 512.
b^{11}. Fore wing with the apex rounded .... 69. OMMATOPHORA, [p. 551.
b^{8}. Palpi with the 3rd joint upturned, a short sharp frontal tuft .... 43. DELGAMMA, p. 512.
c^{8}. Palpi with the 3rd joint obliquely porrect.
a^{9}. Frons with a short sharp tuft; fore wing with the cilia non-crenulate.
a^{10}. Fore wing with the apex slightly produced ...... 54. THERMESIA, p. 533.
b^{10}. Fore wing with the apex not produced.

a^{11}. Fore wing broad; hind wing with the anal angle truncate .... 40. ANEREUTHINA, p. 509.
b^{11}. Fore wing narrower; hind wing with the anal angle rounded .... 42. DORDURA, p. 511.
b^{9}. Frons rounded; the cilia crenulate .... 41. SERRODES, p. 510.
d^{7}. Palpi with the 2nd joint triangularly scaled, the third very minute.................... 48. ACANTHOLIPES, [p. 520.
e^{8}. Palpi porrect and triangularly scaled; a short sharp frontal tuft.
a^{9}. Fore wing with the inner margin not lobed near base nor hooked at outer angle...... 11. HYPOCALA, p. 452.
b^{9}. Fore wing with the inner margin lobed near base and hooked at outer angle.
a^{10}. Fore wing with veins 8 and 9 anastomosing to form an areole .... 74. CALPE, p. 563.
b^{10}. Fore wing with veins 7, 8, 9, 10 stalked .... 76. ARSACIA, p. 567.
b^{6}. Fore wing with the costa straight; the outer margin obliquely rounded.
a^{7}. Fore wing with the apex rectangular .... 63. BEMATHA, p. 546.
b^{7}. Fore wing with the apex acute; hind tibiæ of male distorted .. 22. GNAMPTOGYIA, p. 478.
c^{6}. Fore wing with the costa very highly arched towards apex, which is more or less falcate.
a^{7}. Fore wing with no lobe or tuft of hair on inner margin.
a^{8}. Palpi with the 3rd joint of moderate length; fore wing with the cilia crenulate.
a^{9}. Fore wing narrow and produced at apex .... 64. OXYODES, p. 546.
b^{9}. Fore wing broad and short .. 71. MINIODES, p. 556.
b^{8}. Palpi with the 3rd joint minute; the cilia non-crenulate.
a^{9}. Palpi upturned; no frontal tuft .... 65. HAMODES, p. 547.
b^{9}. Palpi with the 3rd joint porrect; a short sharp frontal tuft; fore wing with the apex extremely acute .... 66. PLEURONA, p. 549.
b^{7}. Fore wing with the inner margin lobed near base and with a tuft of hair at outer angle .... 73. OPHIDERES, p. 558.
b^{5}. Fore wing with the outer margin more or less angled.
a^{6}. Fore wing with the cilia non-crenulate.

a^7. Fore wing with the apex not produced; the outer margin of both wings slightly angled.
a^8. Fore wing with the inner margin excised and with tufts of hair at centre and outer angle. 79. PLUSIODONTA, p. 577.
b^8. Fore wing with the inner margin not excised and without tufts of hair.
a^9. Palpi with the 3rd joint short. 60. EPISPARIS, p. 543.
b^9. Palpi with the 3rd joint longer. 61. CLATERNA, p. 544.
b^7. Fore wing with the apex produced; the outer margin of both wings highly angled .... 62. AMPHIGONIA, p. 545.
b^6. Fore wing with the cilia highly crenulate .... 33. LACERA, p. 491.
b^4. Mid tibiæ spined.
a^5. Palpi with the 3rd joint upturned; no frontal tuft.
a^6. Palpi with the 2nd joint hardly reaching vertex of head and clothed with hair.
a^7. Fore tibiæ with a pair of crooked terminal spines .... 24. GNAMPTONYX, p. 480.
b^7. Fore tibiæ without crooked terminal spines.
a^8. Hind tibiæ spined.
a^9. The cilia non-crenulate.
a^{10}. Fore wing with the apex and outer margin somewhat rounded .... 25. PSEUDOPHIA, p. 480.
b^{10}. Fore wing with the apex somewhat produced; the outer margin oblique .... 50. TRIGONODES, p. 527.
b^9. The cilia crenulate .... 10. ERCHEIA, p. 451.
b^8. Hind tibiæ not spined.
a^9. The cilia crenulate .... 5. CATOCALA, p. 439.
b^9. The cilia non-crenulate.
a^{10}. Palpi with the 2nd joint fringed with long hair.... 68. HOMŒA, p. 551.
b^{10}. Palpi with the 2nd joint clothed with short hair.
a^{11}. Fore wing somewhat falcate. 53. ENTOMOGRAMMA, [p. 532.
b^{11}. Fore wing not falcate.
a^{12}. Fore wing with the outer margin somewhat oblique .... 49. REMIGIA, p. 525.
b^{12}. Fore wing with the outer margin more erect.... 52. GRAMMODES, p. 531.
b^6. Palpi with the 2nd joint reaching just above vertex of head and smoothly scaled.
a^7. Fore wing with the costa evenly arched.
a^8. Hind wing with the anal angle truncate; the tibiæ hairy.... 36. OPHIUSA, p. 493.

b[8]. Hind wing with the anal angle rounded; the tibiæ usually naked .... 70. SPIRAMA, p. 552.
b[7]. Fore wing narrower; the costa arched near base, then straight. 37. LAGOPTERA, p. 505.
b[5]. Palpi with the 3rd joint obliquely porrect.
a[6]. Frons with a short sharp tuft; fore wing with the apex not falcate .... 39. HYPÆTRA, p. 507.
b[6]. Frons rounded; fore wing with the apex falcate; cilia of both wings highly crenulate; hind wing with the outer margin produced to a point at vein 4 .. 12. PTEROCYCLOPHORA, [p. 454.

Genus CETOLA.

Cetola, *Wlk. Cat.* v, p. 1015 (1855).

Type, *C. dentata*, Wlk.
Range. Nepal; Indore.

Eyes naked and without lashes; proboscis thin and weak. Palpi hairy, upturned, and reaching just above vertex of head. Antennæ serrated in both sexes; thorax with a large spreading tuft of scales; abdomen with dorsal tufts on proximal segments; legs hairy, without spines. Fore wing with the cilia crenulate and strongly toothed towards outer angle. Hind wing with vein 5 given off from below centre of discocellulars.

2348. **Cetola dentata**, *Wlk. Cat.* v, p. 1016; *C. & S.* no. 1166.
Ramesa ligniferata, *Wlk. Cat.* xxxii, p. 415; *C. & S.* no. 1526.

Head, thorax, and abdomen red-brown; collar and thoracic tuft grey-brown. Fore wing reddish buff, with a broad grey-brown fascia on costa, narrowing to apex; the orbicular indistinct, large, and rounded with dark outline; reniform with the upper part indistinct, the lower white and extending downwards almost to

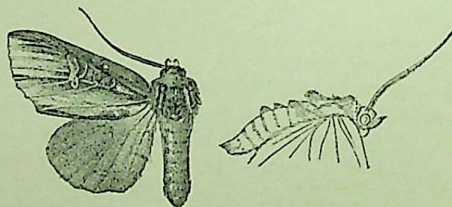



Fig. 245.—*Cetola dentata*, ♂. ½.

vein 2; some red-brown streaks towards apex, at middle of outer margin, and on inner margin. Hind wing white in male, with the anal angle red-brown; in female dark fuscous, with red-brown marginal band.

Hab. Nepal; Mhow. *Exp.*, ♂ 35, ♀ 46 millim.

Genus MOMA.

Moma, *Hübn. Verz.* p. 203 (1818).

Type, *M. ludifica*, Linn., from Europe.

Range. Europe; India; Ceylon.

Eyes hairy; proboscis fully developed; palpi obliquely upturned and clothed with long hair below, the 3rd joint short. Thorax and abdomen without tufts, the latter clothed with long hair at sides.

Larva forms a cocoon in a rolled-up leaf.

SECT. I. Antennæ of male simple.

2349. **Moma champa,** *Moore, P. Z. S.* 1879, p. 403, pl. 33, fig. 2; *C. & S.* no. 1213.

♂. Head and thorax white; the 3rd joint of palpi, a spot between antennæ, and the antennæ, except basal part of shaft, black; thorax banded and spotted with black; abdomen yellow, the extremity white, a dorsal series of black spots and ventral series of bands. Fore wing white, with some black marks near base; about 7 prominent but ill-defined waved and dentate black lines; a ring-spot at end of cell. Hind wing white, the inner area clothed with yellow hair; the veins black; the apex slightly suffused with fuscous; cilia of both wings chequered black and white.

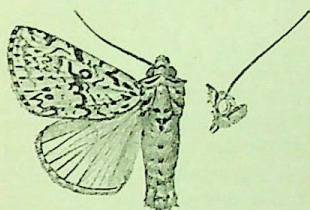



Fig. 246.
Moma champa, ♂. ½.

♀ with the outer area of hind wing suffused with black.

Hab. N.W. Himalayas; Punjab; Nilgiris; Ceylon. *Exp.*, ♂ 44, ♀ 56 millim.

SECT. II. Antennæ of male minutely fasciculated.

2350. **Moma entoxantha,** n. sp.

♂. Head and thorax fuscous black and whitish; abdomen orange, with dark dorsal tufts. Fore wing fuscous brown, irrorated with white and suffused with olive-green and purple shades; double ante- and postmedial lines, the last whitish at costa and inner margin; an orbicular black ring-spot and lunulate reniform; indistinct irregularly sinuous medial and submarginal lines; a whitish patch at outer angle. Hind wing black, the basal and inner areas orange; cilia chequered black and white. Underside of fore wing black, with the basal area orange; a short whitish postmedial band from costa and series of white streaks on the veins to the patch at outer angle; hind wing with the basal and inner areas orange; the apical and outer areas blue-black, with a

medial white band from costa to lower angle of cell; a postmedial band to vein 2 and some diffused white on outer margin.

Hab. Simla; Sikhim (*Möller*). *Exp.* 42 millim. Type in coll. Elwes.

Genus TRISULOIDES.

Trisuloides, *Butl. A. M. N. H.* (5) vii, p. 36 (1881).
Tambana, *Moore, Lep. Atk.* p. 155 (1882).

Type, *T. sericea*, Butl.

Range. Himalayas; Assam hills; Sylhet.

Eyes hairy; palpi reaching vertex of head and clothed with hair; thorax hairy; abdomen with dorsal tufts; tibiæ moderately hairy. Fore wing with the apex somewhat rounded. Hind wing with vein 5 from below centre of discocellulars.

SECT. I. (*Tambana*). Antennæ fasciculated in male.

2351. **Trisuloides infausta**, *Wlk. Cat.* ix, p. 237; *C. & S.* no. 2075.

Dark cupreous-fuscous, suffused with grey. Fore wing with indistinct short subbasal and double waved antemedial line, with a slight dentition below the cell; the orbicular small and sometimes whitish; the reniform indistinct; an indistinct double waved post-medial line excurved beyond cell; an irregular submarginal line; a marginal series of black specks. Hind wing pale cupreous, more or less suffused with fuscous towards outer margin.

The race from the N.W. Himalayas is much blacker and less cupreous.

Hab. N.W. Himalayas; Sikhim; Sylhet; Shillong. *Exp.*, ♂ 46, ♀ 50 millim.

2352. **Trisuloides variegata**, *Moore, Lep. Atk.* p. 155; *C. & S.* no. 2260.

Head, thorax, and abdomen golden-fulvous, irrorated with brown and white. Fore wing cupreous-brown, irrorated with white; indistinct subbasal and double ante- and postmedial waved lines, the latter excurved beyond cell; an indistinct irregular dark sub-marginal line, with some white streaks beyond it. Hind wing golden-fulvous, the outer area suffused with fuscous.

Hab. Sikhim. *Exp.* 60 millim.

SECT. II. (*Trisuloides*). Male with the antennæ bipectinated, the branches short.

2353. **Trisuloides sericea**, *Butl. A. M. N. H.* (5) vii, p. 36; *C. & S.* no. 1082.

Trisuloides catocalina, *Moore, P. Z. S.* 1883, p. 17; *C. & S.* no. 1081.

Fuscous brown, irrorated and suffused with grey; tegulæ with two black bars. Fore wing with antemedial waved black line;

a ring-spot in end of cell; a sinuous medial diffused line; an indistinct waved postmedial and a sinuous submarginal line, the space between them irrorated with grey scales. Hind wing fuscous, with

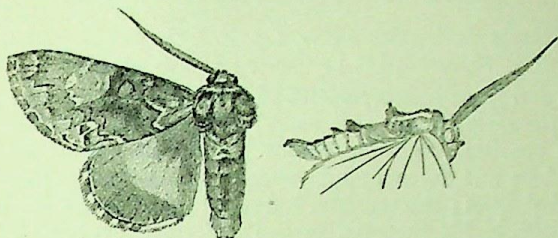



Fig. 247.—*Trisuloides sericea*, ♂. ½.

broad medial yellow band not reaching costa or inner margin; a slight marginal grey line and patch at anal angle. Underside of fore wing with yellow in cell and beyond the medial dark band.

Hab. N.W. Himalayas; Sikhim; Shillong. *Exp.* 64 millim.

2354. **Trisuloides luteifascia**, *Swinh. MS.*

♀. Blackish red-brown, irrorated with grey; abdomen fulvous at sides. Fore wing with indistinct curved postmedial pale line. Hind wing with broad medial orange band ending near anal angle; a marginal series of pale lunules. Underside of fore wing with the disk orange, except a dark patch at end of cell. Hind wing with an orange patch near anal angle.

Hab. Khásis. *Exp.* 75 millim. Type in B. M.

2355. **Trisuloides cærulea**, *Butl. Ill. Het.* vii, p. 35, pl. 128, fig. 3.

Differs from *sericea* in the thorax being more rufous; the abdomen darker. Fore wing with whitish patch on disk extending to costa and outer angle. Hind wing uniform blue-black; the cilia whitish in parts. Underside of fore wing with the yellow postmedial band extending to outer angle; hind wing irrorated with white.

Hab. N.W. Himalayas. *Exp.* 70 millim.

Genus **TRISULA**.

Trisula, *Moore, Lep. E. I. Co.* p. 420 (1858).

Type, *T. variegata*, Moore.

Range. Throughout India and Ceylon.

Palpi reaching vertex of head, the 2nd joint clothed with long hair; antennæ fasciculated in male; metathorax with a slight tuft; abdomen with thick woolly hair on dorsum of proximal segments;

tibiæ hairy and without spines. Fore wing with the costa somewhat arched towards apex.

Sect. I. Palpi with the 3rd joint minute.

2356. **Trisula variegata**, *Moore, Lep. E. I. Co.* p. 420, pl. 12 *a*, fig. 1, & pl. 22, figs. 1, 1 *a*, 1 *b* (larva) ; *C. & S.* no. 1331.

Palpi and frons rufous ; vertex of head and collar pale ; thorax rufous, the metathoracic tuft black ; abdomen pale, with the long hair on proximal segments rufous. Fore wing pale, variegated with rufous and fuscous ; indistinct double waved subbasal and antemedial lines ; the reniform indistinct ; a double dentate postmedial line, highly excurved beyond cell, then incurved below it, and with some rufous patches beyond it ; an oblique black band across apical area ; a marginal series of dark specks. Hind wing

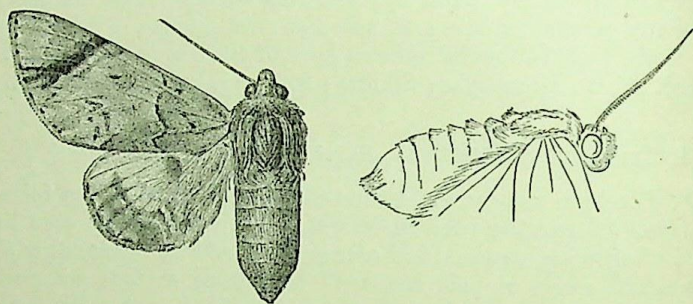



Fig. 248.—*Trisula variegata*, ♂. ½.

yellowish white, with a large blackish spot at end of cell ; a curved postmedial band with traces of a line inside it towards inner margin ; the area beyond it more or less suffused with fuscous ; the cilia rufous.

Larva clothed with rather sparse tufts of long hair. Head blackish, the frons pale ; thoracic segments pale, the others red-brown, with numerous blue warts. Food-plant, *Ficus religiosa.* It forms a cocoon covered with extraneous matter, stones, excrement, etc.

Hab. Throughout India and Ceylon. *Exp.*, ♂ 78, ♀ 80–104 millim.

Sect. II. Palpi slender, with the 3rd joint longer.

2357. **Trisula ? boarmoides**, *Wlk. Cat.* xxxiii, p. 923 ; *C. & S.* no. 2360.

♀. Grey-brown. Fore wing with double antemedial and postmedial sinuous black lines, the latter joined by an oblique streak from the apex ; traces of waved subbasal, medial, and submarginal

lines; a marginal series of dark striæ. Hind wing with the basal half pale, the outer fuscous brown, with marginal series of dark striæ.

Type in bad condition.

Hab. "N. India." *Exp.* 30 millim.

Genus **CATOCALA**.

Catocala, *Schrank, Fauna Boica*, ii, 2, p. 158 (1802).

Type, *C. fraxini*, Linn., from Europe.

Range. Nearctic and Palæarctic regions; Himalayas; Nilgiris; Ceylon.

Palpi reaching just above vertex of head, the 2nd joint thickly scaled; antennæ of male fasciculated; thorax smoothly scaled; abdomen with dorsal ridges of coarse hair on proximal segments, which are sometimes developed into tufts; fore tibiæ more or less hairy; hind tibiæ spined. Fore wing with the apex nearly rectangular; the cilia crenulate. Hind wing with the cilia crenulate; vein 5 from below centre of discocellulars.

Larvæ with four pairs of abdominal prolegs.

Sect. I. Hind wing yellow.

A. *Mid tibiæ of male with a tuft of long hair from the base.*

2358. **Catocala rama**, *Moore, Lep. Ceyl.* iii, p. 128, pl. 160, fig. 6; *C. & S.* no. 2282.
Audea macula, *Hmpsn. Ill. Het.* viii, p. 84, pl. 146, fig. 21.

Head and collar reddish; thorax and abdomen grey. Fore wing grey, irrorated with black; a short subbasal line; an oblique antemedial waved black line; the reniform spot indistinct and pale, with a fuscous patch on the costa above it; the postmedial line extremely irregularly dentate and highly angled beyond the cell. Hind wing yellow, with a curved medial black band not reaching costa or inner margin; the outer area black, with irregular inner edge, and pale patches at apex and anal angle. Underside with a medial dark band, and the outer area of both wings dark.

In the form *macula*, from the Nilgiris, the abdomen is yellow, and the black medial band of hind wing is reduced to a spot.

Hab. Nilgiris; Ceylon. *Exp.* 72 millim.

B. *Tibiæ of male without tufts.*

2359. **Catocala patala**, *Feld. Reis. Nov.* pl. 112, fig. 23; *C. & S.* no. 2279.
Catocala inconstans, *Butl. Ill. Het.* vii, p. 76, pl. 132, figs. 2, 3.

Differs from *rama* in the head, thorax, and fore wing being darker grey, more variegated with fuscous and brown. Fore wing with the antemedial line angled inwards at vein 1; a large black-edged spot below the reniform; the postmedial line deep black, with two prominent dentitions beyond the cell and one directed inwards above inner margin; a marginal series of black and pale specks. Hind wing orange-yellow, with the inner area

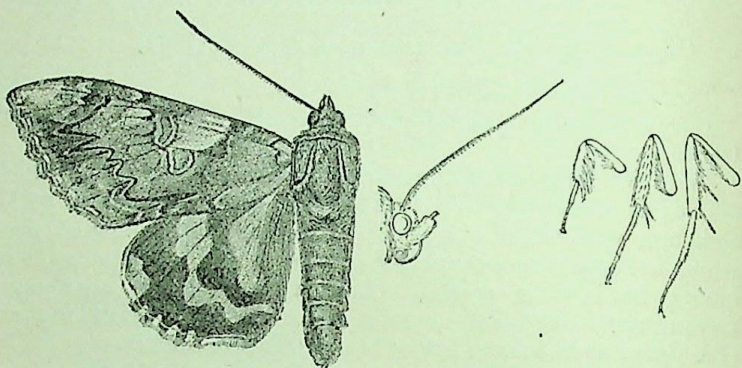



Fig. 249.—*Catocala patala*, ♂. ½.

brown; the medial black band expanding at costa and on disk; the outer band with sinuous inner edge. Underside of fore wing with white beyond the medial band; hind wing with small spot at end of cell.

Felder's figure makes the inner margin of the hind wing yellow.

Hab. N.W. Himalayas. *Exp.* 70–80 millim.

2360. **Catocala flavescens**, n. sp.

Differs from *rama* in being yellower grey. Fore wing with the postmedial line not so highly angled beyond the cell; a crenulate marginal line and series of ochreous spots. Hind wing deeper yellow, with the medial band broader on disk; the patches on marginal band at apex and towards anal angle yellow and large.

Hab. Simla (*Harford*). *Exp.* 62 millim. Type in B. M.

2361. **Catocala nymphæa**, *Esp. Schmett. Eur.* pl. 105, fig. 4.
Catocala vestalis, *Boisd. Ind. Meth.* p. 168.
Catocala conjux, *Freyer, Beitr. Schmett.* vi, p. 137, pl. 569, fig. 2.
Catocala dotata, *Wlk. Cat.* xiii, p. 1212; *C. & S.* no. 2277.
Catocala persimilis, *Warren, P. Z. S.* 1888, p. 314; *C. & S.* no. 2279*a*.
Catocala tapestrina, *Moore, Lep. Atk.* p. 166, pl. v, fig. 13; *C. & S.* no. 2284.

Head, thorax, and abdomen dark red-brown. Fore wing dark red-brown, variegated with brown, grey, fuscous, and ochreous; a

pale patch in cell beyond the reniform, which has a black outline and a black-edged pale patch below it; the postmedial line highly angled and dentate, with a deep narrow sinus above inner margin; a marginal series of black and ochreous specks; an indistinct dentate submarginal line. Hind wing with the bands as in *flavescens*, but blacker. Underside with the medial and outer bands black.

The form *tapestrina*, from Simla and Sikhim, is larger and more richly coloured. Fore wing with some greenish grey round the reniform, and the spot below it small. Hind wing deeper orange and black.

Hab. N. America; Europe; N.W. Himalayas; Sikhim. *Exp.* 54–70 millim.

2362. **Catocala distorta**, *Butl. Ill. Het.* vii, p. 77, pl. 132, fig. 4.

Differs from *nymphæa* in the thorax and fore wing being duller and more uniform fuscous brown; the latter not variegated and without the patches in and below cell; the postmedial line not dentate, but with a deep sinus from it to below end of cell and slight angle above inner margin. Hind wing with the medial band narrower on disk.

Hab. Kulu. *Exp.* 52 millim.

Sect. II. Hind wing crimson.

2363. **Catocala prolifica**, *Wlk. Cat.* xiii, p. 1211; *Butl. Ill. Het.* vi, pl. 110, fig. 9; *C. & S.* no. 2280.
Catocala afghana, *Swinh. Trans. Ent. Soc.* 1885, p. 352, pl. 9, fig. 8; *C. & S.* no. 2274.

Head and thorax brownish black, irrorated with grey; abdomen fuscous. Fore wing brownish black, irrorated with grey, and suffused with black on basal, costal, and medial areas; indistinct double ante- and postmedial waved lines, the latter excurved beyond cell; traces of a submarginal line and marginal series of spots. Hind wing crimson, with obliquely curved medial black band, expanding into patches in parts; a marginal black band with sinuous inner edge, and widest at apical area; a white patch at apex, the cilia whitish. Underside of fore wing white, with antemedial and medial black bands conjoined at inner margin; the outer area black, widest at apex; hind wing crimson, the costal area white; the black bands as on upperside.

The form *afghana* has the head, thorax, and fore wing paler and suffused with olive-brown instead of black.

Hab. Afghanistan; Biluchistan; N.W. Himalayas; Sikhim. *Exp.* 92 millim.

2364. **Catocala nupta**, *Linn. Syst. Nat.* xii, p. 841.
Catocala pacta, *Hüfn. Berl. Mag.* iii, p. 210.
Noctua concubina, *Borkh. Schmett. Eur.* iv, p. 21.

Catocala unicuba, *Wlk. Cat.* xiii, p. 1210; *Butl. Ill. Het.* vi, pl. 110, fig. 11; *C. & S.* no. 2285.

Differs from *prolifica* in the thorax and fore wing being browner, slightly suffused with black and with no olive tinge. Fore wing with the lines more prominent; the postmedial line more irregularly dentate and with a sinus above inner margin. Hind wing purer crimson.

Hab. Europe; Punjab. *Exp.* 80 millim.

2365. **Catocala sponsalis,** *Wlk. Cat.* xiii, p. 1213; *Butl. Ill. Het.* vi, pl. 111, fig. 1; *C. & S.* no. 2283.

Differs from *nupta* in the collar being black-edged; the fore wing browner; the lines black and prominent; the antemedial line more irregular, outwardly oblique to below the cell, and highly angled at vein 1; the postmedial line very highly angled beyond the cell, then highly dentate to inner margin. Hind wing rose-coloured, with the medial and marginal bands much reduced. Underside with the black markings reduced.

Hab. Nepal. *Exp.* 84 millim.

2366. **Catocala concubia,** *Wlk. Cat.* xiii, p. 1210; *Butl. Ill. Het.* vi, pl. 110, fig. 10; *C. & S.* no. 2276.

Differs from *prolifica* in the head, thorax, and fore wing being greyer; the last with the postmedial line more irregularly dentate and sending a deep sinus inwards to below the reniform. Hind wing purer crimson, without any orange tinge. Underside of fore wing with the white areas broader; hind wing with the white running down to vein 3 between the medial and marginal bands.

Hab. N.W. Himalayas. *Exp.* 96 millim.

Sect. III. Hind wing yellowish white.

2367. **Catocala nivea,** *Butl. Cist. Ent.* ii, p. 241, & *Ill. Het.* ii, pl. 33, fig. 4; *C. & S.* no. 2278 A.

Head and thorax grey, slightly irrorated with black; the palpi and collar brown; abdomen grey. Fore wing brownish grey, irrorated with black, with a yellowish-white fascia below base of costa, and patches of the same colour on the reniform and postmedial line; subbasal and antemedial waved lines, the latter excurved; a fuscous spot on costa above reniform; the postmedial line excurved and highly dentate, with a black streak from it to outer margin above vein 5; a marginal series of black and white specks. Hind wing yellowish white, with irregular black medial band not reaching costa or inner margin; a broad black submarginal band, widest at costa.

Hab. Japan; Thandiáni, Punjab. *Exp.* 100–116 millim.

Genus PHORICA.

Phorica, *Wlk. Cat.* xv, p. 1732 (1858).

Type, *P. phasipennis*, Wlk.
Range. "Hindostan."
Differs from *Batracharta* in the palpi being rather shorter and more slender, the 3rd joint not enlarged at extremity. Fore wing with the outer margin not so oblique and not hooked at outer angle.

2368. **Phorica phasipennis,** *Wlk. Cat.* xv, p. 1732; *C. & S.* no. 2329.

♂. Head dark red-brown; thorax clothed with grey and red-brown scales; abdomen fuscous black. Fore wing vinous grey-brown; an obscure oblique line from costa before apex to base of inner margin, the area inside it with grey and brown streaks; a greenish yellow patch beyond it below cell; a white spot at

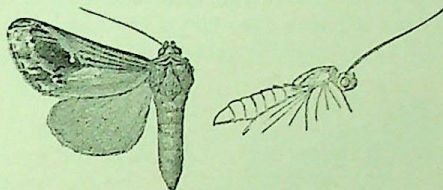



Fig. 250.—*Phorica phasipennis*, ♂. 1/1.

lower angle of cell; a large brown patch beyond cell; an indistinct dentate submarginal line; some brown streaks on marginal area; some white specks on costa towards apex. Hind wing dark brown; underside paler, with indistinct cell-spot.
Hab. "Hindostan." *Exp.* 46 millim.

Genus BATRACHARTA.

Batracharta, *Wlk. Journ. Linn. Soc.* vi, p. 196 (1862).
Pilosocrures, *Hmpsn. Ill. Het.* viii, p. 85 (1891).

Type, *P. obliqua*, Wlk.
Range. Manipur; Nilgiris; Borneo.
Palpi upturned, the 2nd joint reaching vertex of head, the 3rd long, naked, and blunt at extremity; antennæ with fasciculated cilia in male; abdomen long, and extending far beyond the hind wing, with a dorsal tuft on first two segments and slightly humped towards extremity; mid and hind tibiæ fringed with long hair on the upperside. Fore wing with the costa arched towards apex; the outer margin very obliquely rounded; the outer angle hooked. Hind wing with the apex much rounded.

2369. **Batracharta obliqua**, *Wlk. Journ. Linn. Soc.* vi, p. 196.
Pilosocrures variegata, *Hmpsn. Ill. Het.* viii, p. 85, pl. 146, fig. 20.

Head ochreous; 2nd joint of palpi black. Thorax blue-black, with rufous scales on the collar and metathorax and olive scales on patagia; abdomen smoky black, with the dorsal tufts rufous. Fore wing with an oblique sinuous line from costa beyond middle to inner margin near base; the area inside it blue-black, variegated by black strigæ and rufous, brown, and ochreous streaks; indistinct brown orbicular and reniform spots; the area beyond the line pale reddish, variegated by vinous, purplish brown, and black suffusion; the outer margin narrowly dark, sending a tooth inwards between veins 4 and 5, and with fine ochreous marginal lines. Hind wing fuscous brown; underside with basal area pale; each wing with a large black cell-spot.

Hab. Sikhim; Nilgiris; Borneo. *Exp.* 48 millim.

2370. **Batracharta irrorata**, n. sp.

♂. Differs from *obliqua* in the head and thorax being brown and black. Fore wing with the oblique line highly excurved round end of cell, the area inside it more uniform blue-black, with a

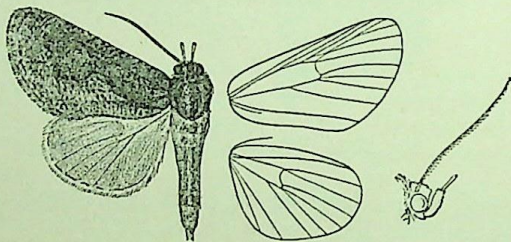



Fig. 251.—*Batracharta irrorata*, ♂. ½.

few ochreous specks and the indistinct orbicular and reniform spots brown; the area beyond the line red-brown, evenly irrorated with dark specks; the markings on outer margin slight. Hind wing and underside paler.

Hab. Manipur, 7000 feet (*Doherty*). *Exp.* 48 millim. Type in coll. Elwes.

Genus **ERYGIA**.

Erygia, *Guen. Noct.* iii, p. 49 (1852).
Ansa, *Wlk. Cat.* xv, p. 1731 (1858).
Calicula, *Wlk. Cat.* xv, p. 1807.

Type, *E. apicalis*, Guen.

Range. Throughout India, Ceylon, and Burma; Java; Australia.

Palpi upturned and very slender, almost naked, the 2nd joint reaching vertex of head, the 3rd rather variable in length; antennæ minutely ciliated in male; metathorax with a large

spreading tuft; abdomen with dorsal tufts on the proximal segments; male with a large anal tuft; tibiæ without spines; the femora fringed with long hair, as also the fore tibiæ; the mid tibiæ with shorter hair; the hind tibiæ and tarsi with long hair. Fore wing with the apex quadrate; a tooth of scales at outer angle; the cilia crenulate.

2371. **Erygia apicalis**, *Guen. Noct.* iii, p. 50; *C. & S.* no. 2368.
Erygia usta, *Wlk. Cat.* xxxiii, p. 918.
Calicula exempta, *Wlk. Cat.* xv, p. 1808.
Calicula squamiplena, *Wlk. Cat.* xv, p. 1808.
Ansa filipalpis, *Wlk. Cat.* xv, p. 1731; *Hmpsn. Ill. Het.* ix, pl. 165, fig. 14; *C. & S.* no. 2599.
Dianthœcia geometroides, *Wlk. Cat.* xxxiii, p. 722.

Head and thorax clothed with dark and red-brown scales; abdomen with the dorsal tufts red-brown; male with the anal tufts black. Fore wing dark and red-brown, with numerous

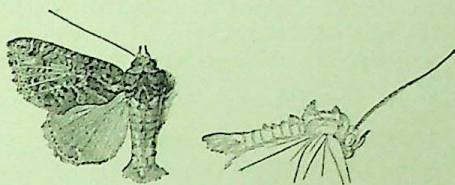



Fig. 252.—*Erygia apicalis*, ♂. ½.

indistinct waved lines, the subbasal, irregular antemedial, and postmedial line excurved beyond the cell being the most conspicuous; a red-brown band inside the antemedial line from cell to inner margin; some red-brown marks near apex and outer angle; a crenulate marginal line. Hind wing fuscous, with a reddish patch near centre of outer margin.

Hab. Throughout India, Ceylon, and Burma; Java; Australia. *Exp.* 42–46 millim.

2372. **Erygia reflectifascia**, *Hmpsn. Ill. Het.* viii, p. 85, pl. 146, fig. 18.

Differs from *apicalis* in being pale grey-brown. Fore wing with the irregular antemedial line more erect; the postmedial line recurved to lower angle of cell; some subapical dark streaks; no rufous band on antemedial line or marks near apex and outer angle. Hind wing whitish; the outer area suffused with fuscous; a crenulate marginal line.

Another specimen has the fore wing very pale, the inner area with patches of fuscous suffusion.

Hab. Sind; Nilgiris. *Exp.* 40 millim.

Genus SYPNA.

Sypna, *Guen. Noct.* iii, p. 144 (1852).

Type, *S. omicronigera.* Guen.
Range. Japan; Himalayas; Assam; Nilgiris; Burma; Java.
Palpi with the 2nd joint thickened and reaching vertex of head, the 3rd long; antennæ of male usually fasciculated; thorax quadrately scaled; the metathorax slightly tufted; abdomen with dorsal ridges and tufts of hair on proximal segments; tibiæ slightly hairy and usually without spines. Fore wing with the apex rounded; the cilia crenulate. Hind wing with the cilia crenulate; vein 5 from lower angle of cell.

SECT. I. Mid tibiæ without spines.

A. *Antennæ of male fasciculated.*

2373. **Sypna omicronigera,** *Guen. Noct.* iii, p. 145; *C. & S.* no. 2517.
Sypna mormoides, *Butl. Trans. Ent. Soc.* 1881, p. 202, & *Ill. Het.* vi, pl. 111, fig. 2; *C. & S.* no. 2515.
Sypna albovittata, *Moore, Lep. Atk.* p. 168, pl. 5, fig. 25; *C. & S.* no. 2499.
Tavia dubitaria, *Wlk. Cat.* xxxiii, p. 939; *C. & S.* no. 2509.

Fore wing brown, more or less suffused with purple and irrorated with black; patagia with pale and dark bands. Fore wing with subbasal and medial black-brown bands, with waved edges and lines outlining them; the reniform large and very indistinct; a postmedial black-brown lunulate band with a lunulate black line beyond it; a submarginal series of small lunules, usually with white specks beyond them. Hind wing dark brown; the area at anal angle purplish, with some waved black lines crossing it; a submarginal series of dark specks with white specks beyond them near anal angle. Underside with medial fuscous band on fore wing placed on a pale patch; hind wing with a dark-edged pale cell-spot.

Omicronigera is a small form from Sikhim and the Khásis, with the markings of fore wing not well-defined; *dubitaria*, from the N.W. Himalayas, is larger, with the bands more prominent, and sometimes with white suffusion before and beyond the subbasal and beyond the medial band; *mormoides*, from Sikhim, is the largest form, with the markings most prominent; the reniform may be ochreous, with some white specks round it; *albovittata* has some white suffusion on fore wing inside the antemedial line and beyond the postmedial.

Hab. N.W. Himalayas; Sikhim; Assam. *Exp.* 55–86 millim.

2374. **Sypna cœlisparsa,** *Wlk. Cat.* xiv, p. 1262; *Butl. Ill. Het.* vi, pl. 111, fig. 4; *C. & S.* no. 2505.

Differs from typical *omicronigera* in the medial band of under-

side being black and on hind wing more curved, situated on a prominent white band inwardly defined by fuscous; the outer area fuscous black, with white patches at outer angle of fore wing and towards apex and anal angle of hind wing.

Some specimens have the cilia at apex of hind wing ochreous.

Hab. Assam; Java. *Exp.* 58 millim.

2375. **Sypna constellata,** *Moore, P. Z. S.* 1883, p. 24; *Waterh. Aid,* ii, pl. 159, fig. 2; *C. & S.* no. 2506.

Differs from *omicronigera* in being yellow-brown without the purplish tinge; the base of antennæ white; thorax with white specks. Fore wings uniform brown, slightly speckled with white, and with series of prominent white spots on the subbasal, antemedial, and postmedial lines, the costa and outer margin; a white spot in cell; the reniform white, with white spots round it; a sinuous submarginal dark line. Hind wing with white spots on inner and outer margin near anal angle; the cilia ochreous near apex. Underside ochreous, irrorated with black; the medial band more prominent and irregular; the postmedial area black, the outer ochreous except at centre of fore wing.

Hab. N.W. Himalayas. *Exp.* 72 millim.

2376. **Sypna tenebrosa,** *Butl. Trans. Ent. Soc.* 1881, p. 203, & *Ill. Het.* vi, pl. 111, fig. 7; *C. & S.* no. 2528.

Differs from the form *dubitaria* in being paler brown without the purplish tinge; the underside as in *cœlisparsa*, but without the purplish tinge on the black areas; cilia at apex of hind wing sometimes ochreous.

Hab. Sikhim. *Exp.* 60 millim.

2377. **Sypna punctosa,** *Wlk. Cat.* xxxiii, p. 939; *C. & S.* no. 2522.
Tavia submarginata, *Wlk. Cat.* xxxiii, p. 941; *C. & S.* no. 2527.
Tavia biocularis, *Moore, P. Z. S.* 1867, p. 71; *C. & S.* no. 2501.
Sypna umbrosa, *Butl. Trans. Ent. Soc.* 1881, p. 204; *Ill. Het.* vi, pl. 111, fig. 3; *C. & S.* no. 2529.
Sypna ochreicilia, *Hmpsn. Ill. Het.* viii, p. 89, pl. 147, fig. 1.

Fuscous brown, with a purplish tinge. Fore wing with waved black subbasal, ante-, and postmedial lines, the last excurved round cell; a pale or dark speck in cell; the reniform dark and indistinct, or whitish in typical *punctosa*; a sinuous submarginal waved line; some pale specks on costa towards apex and a marginal series. Hind wing with indistinct sinuous medial and straight submarginal lines. *Punctosa*, from the N.W. Himalayas, is a greyish form, the cilia ochreous at apex of hind wing, underside with the medial line on a pale band. *Ochreicilia*, from the Nilgiris, is similar, but fuscous brown: *biocularis*, from Sikhim,

and a Travancore form are more suffused with purple; in the former the reniform is pure white, with white specks above and

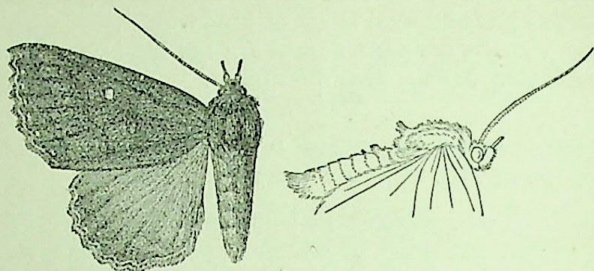



Fig. 253.—*Sypna punctosa* ♂. ½.

below it: *submarginata*=*umbrosa* is a fuscous-brown form, with no pale band on underside.

Hab. N.W. Himalayas; Sikhim; Shillong; Nilgiris; Pirmád, Travancore. *Exp.* 54 millim.

2378. **Sypna marginalis**, n. sp.

♀. Differs from the form *submarginata* of *punctosa* in the fore wing having a white spot on the antemedial line at inner margin; the reniform whitish; the submarginal sinuous line ochreous and not waved; hind wing with an evenly curved ochreous submarginal line; the marginal specks on both wings white. Underside with a marginal ochreous band, irrorated with fuscous, on both wings.

Hab. Sikhim (*Knyvett*). *Exp.* 46 millim. Type in coll. Knyvett.

2379. **Sypna caliginosa**, *Wlk. Cat.* xxxiii, p. 940; *C. & S.* no. 2503.

Differs from the form *submarginata* of *punctosa* in being of a chestnut-red tinge; the sinuous submarginal line not waved; the series of specks white and just before the margin.

Hab. Sikhim. *Exp.* 50 millim.

2380. **Sypna cyanivitta**, *Moore, P. Z. S.* 1867, p. 70; *Waterh. Aid*, ii, pl. 159, fig. 4; *C. & S.* no. 2508.

Sypna brunnea, *Moore, Lep. Atk.* p. 167; *C. & S.* no. 2502.

Ochreous brown, irrorated with fuscous. Fore wing with short straight subbasal pale and dark line; the antemedial line bent inwards at costa; the postmedial line irregularly excurved round cell; the reniform narrow and elongate, sometimes with bluish edges; a very irregularly sinuous and dentate indistinct submarginal black line; an indistinct series of dark specks just before the margin. Hind wing with traces of medial and submarginal sinuous lines, and series of dark specks before the margin. Underside of both wings with indistinct cell-spot and medial line; a series of dark specks before the margin.

Hab. N.W. Himalayas; Sikhim. *Exp.* 56 millim.

2381. **Sypna curvilinea**, *Moore, P. Z. S.* 1867, p. 69, pl. 6, fig. 4; *C. & S.* no. 2507.
Sypna moorei, *Butl. Trans. Ent. Soc.* 1881, p. 209, *and Ill. Het.* vi, pl. 112, fig. 2; *C. & S.* no. 2514.
Sypna fraterna, *Moore, P. Z. S.* 1883, p. 25; *C. & S.* no. 2511.
Sypna rubrifascia, *Moore, P. Z. S.* 1883, p. 24; *C. & S.* no. 2526.

Differs from *cyanivitta* in being dark red-brown. Fore wing with the subbasal line white; the ante- and postmedial lines double, slightly waved, and white, the former curved, the latter forming a straight line with the white-edged reniform, the excurved portion beyond the cell being almost obsolete; a white speck in cell; some white scales on the marginal specks. Underside as in *omicronigera*.

Typical *curvilinea* has the area between the ante- and postmedial lines of fore wing suffused with bluish white, except the costal portion and a patch on inner margin beyond the antemedial line; in *rubrifascia* the apical area of fore wing, the area beyond the postmedial line, and usually the line itself are suffused with bright rufous; in a Dalhousie specimen the ante- and postmedial lines are not waved.

Hab. N.W. Himalayas; Sikhim; Assam; Shillong; Karen Hills. *Exp.* 62 millim.

2382. **Sypna albilinea**, *Wlk. Cat.* xiv, p. 1261; *Butl. Ill. Het.* vi, pl. 112, fig. 1; *C. & S.* no. 2498.

Differs from typical *curvilinea* in the speck in the cell of fore wing being black; a black patch on the submarginal line at apex. Underside as in *cœlisparsa*.

Hab. Sylhet. *Exp.* 60 millim.

2383. **Sypna rectilinea**, *Moore, P. Z. S.* 1867, p. 70; *C. & S.* no. 2523.
Sypna kirbyi, *Butl. Trans. Ent. Soc.* 1881, p. 209; *Waterh. Aid*, ii, pl. 159, fig. 5; *C. & S.* no. 2512.
Sypna prunosa, *Moore, P. Z. S.* 1883, p. 25; *C. & S.* no. 2520.

Differs from *cyanivitta* in the ante- and postmedial lines of fore wing being double, the former straight and almost medial, the latter slightly excurved round cell. Hind wing with an ill-defined fuscous submarginal band with some ochreous scales on it. Underside as in *omicronigera*.

In *rectilinea* the ante- and postmedial double lines are white, the latter forming a straight line with the white edges of the reniform; in *kirbyi* these lines are olive-grey, with olive-grey suffusion between them. A Nága specimen is very dark.

Hab. N.W. Himalayas; Sikhim; Nágas. *Exp.* 48–56 millim.

2384. **Sypna pulchra**, *Butl. Trans. Ent. Soc.* 1881, p. 208, *and Ill. Het.* vi, pl. 111, fig. 5; *C. & S.* no. 2521.

♂. Head and thorax rufous and fuscous; abdomen fuscous. Fore wing black, with a purplish tinge; waved subbasal, antemedial, postmedial, and submarginal lines, the ante- and postmedial lines on ill-defined reddish ochreous bands; a bluish-white

speck in cell; the reniform bluish white, with some specks round it; ill-defined reddish ochreous patches on apical part of outer margin and near outer angle; a marginal series of black and white specks. Hind wing with pale outer edge to the medial line; some pale suffusion at apex, and a streak towards anal angle. Underside as in *tenebrosa*.

Hab. Sikhim. *Exp.* 50 millim.

2385. **Sypna catocaloides**, *Moore, P. Z. S.* 1867, p. 71, pl. 7, fig. 3; *C. & S.* no. 2504.

♂. Red-brown suffused with fuscous. Fore wing with very indistinct pale waved subbasal, ante-, and postmedial lines, the latter excurved round cell; some green suffusion between the subbasal and antemedial lines on inner area, and beyond the postmedial line; a greenish spot in cell and band on discocellulars; the reniform greenish; a sinuous submarginal line, with greenish streaks on apical area from it to the almost marginal series of greenish specks. Hind wing black, with broad fulvous postmedial band; the apical part of outer area fulvous; the area towards anal angle streaked with rufous. Underside orange: fore wing with medial and postmedial oblique black bands not reaching costa or inner margin; a curved submarginal diffused band: hind wing with black streak in cell, spot at end of it and band from lower angle to inner margin; a curved medial band and diffused submarginal band; both wings with almost marginal series of black specks.

Hab. Sikhim. *Exp.* 78 millim.

B. *Antennæ of male bipectinated with short stiff branches.*

2386. **Sypna replicata**, *Feld. Reis. Nov.* pl. 117, fig. 25; *C. & S.* no. 2525.

Sypna apicalis, *Butl. Trans. Ent. Soc.* 1881, p. 206, *and Ill. Het.* vi, pl. 111, fig. 6; *C. & S.* no. 2500.
Sypna lucilla, *Butl. Trans. Ent. Soc.* 1881, p. 206, *and Ill. Het.* vi, pl. 111, fig. 8; *C. & S.* no. 2513.
Sypna plana, *Moore, Lep. Atk.* p. 167, pl. 5, fig. 24; *C. & S.* no. 2519.
Sypna obscurata, *Butl. Trans. Ent. Soc.* 1881, p. 207, *and Ill. Het.* vi, pl. 111, fig. 9; *C. & S.* no. 2516.
Sypna floccosa, *Moore, Lep. Atk.* p. 167, pl. 5, fig. 23; *C. & S.* no. 2510.
Sypna renisigna, *Moore, P. Z. S.* 1883, p. 25; *Waterh. Aid*, ii, pl. 160, fig. 4; *C. & S.* no. 2524.

Dark red-brown, suffused with fuscous. Fore wing with antemedial black band with waved edges; indistinct sinuous medial, postmedial, and submarginal lines; the area between the medial and postmedial lines suffused with yellowish-white in *lucilla*, with grey or pale rufous in *obscurata*, with a similarly coloured patch beyond the line below costa. Hind wing with indistinct medial line on pale band in *lucilla*; both wings with marginal series of

black lunules. Underside ochreous, irrorated with black. Fore wing with oblique medial and postmedial black bands not reaching costa or inner margin; a diffused submarginal band: hind wing with medial line bent inwards towards costa; crenulate postmedial line and diffused submarginal band.

In *replicata*=*apicalis*=*plana* the apex of hind wing is ochreous; *floccosa* has white suffusion on postmedial area of fore wing; *renisigna* some white spots round the reniform stigma.

Hab. Dharmsála; Sikhim; Shillong; Tavoy. *Exp.* 50–58 millim.

SECT. II. Mid tibiæ spined.

2387. **Sypna pannosa**, *Moore, Lep. Atk.* p. 168, pl. 5, fig. 12; *C. & S.* no. 2518.

Head red-brown; thorax greyish black; abdomen red-brown, with the dorsal tufts and extremity black. Fore wing red-brown suffused with grey, and irrorated with rufous; a basal black patch crossed by the subbasal rufous line; indistinct antemedial, medial, and postmedial rufous waved lines, the latter excurved beyond cell; a large black patch at apex and larger patch with slight white marks on it at outer angle. Hind wing fuscous-brown; a large black patch with slight white marks on it at anal angle; some diffused black on submarginal area; a marginal series of black specks. Underside with two straight medial black bands on fore wing and two crenulate lines on hind wing.

Hab. N.W. Himalayas; Khásis. *Exp.* 64 millim.

Genus ERCHEIA.

Ercheia, *Wlk. Cat.* xiii, p. 1107 (1857).

Type, *E. cyllaria*, Cram.

Range. Ethiopian, Oriental, and Australasian regions.

Palpi upturned, the 2nd joint reaching vertex of head, the 3rd long in both sexes; antennæ minutely ciliated in male; thorax and abdomen smoothly scaled; mid and hind tibiæ spined, fore tibiæ of male clothed with rather long hair. Fore wing with the apex somewhat rounded, the cilia of both wings crenulate.

2388. **Ercheia cyllaria**, *Cram. Pap. Exot.* iii, pl. 251, C, D; *C. & S.* no. 2583.
Achæa cyllota, *Guen. Noct.* iii, p. 248; *C. & S.* no. 2584.
Ercheia diversipennis, *Wlk. Cat.* xiii, p. 1108; *C. & S.* no. 2585.
Achæa signivitta, *Wlk. Cat.* xiv, p. 1398.
Achæa polychroma, *Wlk. Cat.* xiv, p. 1400.
Achæa fusifera, *Wlk. Cat.* xiv, p. 1398; *C. & S.* no. 2586.
Melipotis ambidens, *Feld. Reis. Nov.* pl. 116, fig. 9.
Ercheia tenebrosa, *Moore, P. Z. S.* 1867, p. 66; *C. & S.* no. 2589.
Ercheia pannosa, *Moore, P. Z. S.* 1883, p. 24; *C. & S.* no. 2587.

Ercheia uniformis, *Moore, P. Z. S.* 1883, p. 24; *C. & S.* no. 2590.
Ercheia zygia, *Swinh. P. Z. S.* 1885, p. 465; *C. & S.* no. 2592.
Ercheia zura, *Swinh. P. Z. S.* 1885, p. 465; *C. & S.* no. 2591.
Melipotis costipennosa, *Moore, Lep. Atk.* p. 166, pl. 5, fig. 8; *C. & S.* no. 2582.
Melipotis strigipennis, *Moore, Lep. Atk.* p. 165; *C. & S.* no. 2588.

Head, thorax, and fore wing pale reddish brown; the collar and patagia often streaked with black. Fore wing with indistinct, waved, antemedial line; a postmedial line very much excurved beyond the cell; a waved submarginal line; the orbicular represented by a speck; the reniform indistinct, with dark outline. Abdomen and hind wing fuscous black; the latter with three medial white spots, which may be disconnected, and the costal spot obsolescent or conjoined into a band; a spot near centre of outer margin; the cilia white at apex and outer angle. Underside ochreous white, irrorated with black; fore wing with oblique crenulate postmedial line and broad submarginal diffused band; hind wing similar, but with a lunule at end of cell and the line more irregular.

The form *cyllaria* has the fore wing suffused with fuscous and streaked with black; the spots of hind wing disconnected; *cyllota* has dark basal and apical costal patches; *polychroma* has the lines double and two ring-marks below end of cell; *fusifera* has a pale band along inner and outer margin, the remainder of the wing deep

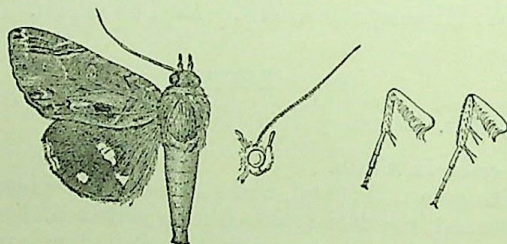



Fig. 254.—*Ercheia cyllaria*, ♂. ½.

fuscous; *diversipennis* has the medial band to hind wing with a dark inner edge, and usually the basal area paler, the fore wing marked like *cyllaria*, but paler; *pannosa* is pale olive with the basal and apical patches; *zygia* has the pale band along inner and outer margins, but ill-defined.

Hab. Throughout India, Ceylon, and Burma; Borneo. *Exp.* 50–60 millim.

Genus HYPOCALA.

Hypocala, *Guen. Noct.* iii, p. 73 (1852).

Type, *H. deflorata*, Fabr.

Range. Throughout the tropical and subtropical zones.

Palpi porrect, triangularly scaled, and rostriform; antennæ

ciliated in male; thorax and abdomen smoothly scaled; tibiæ but slightly hairy, and without spines. Fore wing with the costa slightly arched towards apex, which is rectangular. *Larvæ* with four pairs of abdominal prolegs.

2389. **Hypocala subsatura**, *Guen. Noct.* iii, p. 75; *C. & S.* no. 2292.

Hypocala aspersa, *Butl. P. Z. S.* 1883, p. 164; *C. & S.* no. 2287.

Hypocala subsatura, *var.* limbata, *Butl. Ill. Het.* vii, p. 76, pl. 131, fig. 13.

Head and thorax dark violaceous grey; abdomen orange, with broad black bands above. Fore wing dark violaceous grey; a dark spot at base; an antemedial waved line, angled below median nervure; a black speck in cell; reniform a large dark lunule; the postmedial line sinuous, highly excurved beyond the cell, then bent inwards to below reniform; a submarginal rich brown double line filled in with whitish, arising from the outer margin below apex and angled outwards to the margin at vein 3. Hind wing orange, the costal area black-brown, conjoined to a large spot in end of cell; a broad fascia from base below cell; the outer area black-brown, angled inwards at vein 2, and with a submarginal orange spot at centre and a small marginal spot near anal angle; the cilia orange. Underside orange; the costal and apical areas of fore wing and costa of hind wing ochreous and brown speckled; disk of fore wing black, with a large yellow spot; hind wing with large cell-spot; the outer area marked as above.

Fig. 255.
Hypocala subsatura, ♂. ½.

In the typical form the markings of the fore wing are indistinct; in *aspersa* the ground-colour is much more variegated, the markings prominent; in *limbata* the fore wing is dark chocolate with a broad pale inner band speckled with brown, and angled upwards to lower end of cell; a triangular grey patch on costa before apex.

Hab. N.W. and E. Himalayas; Sylhet. *Exp.* 34–50 millim.

2390. **Hypocala deflorata**, *Fabr. Ent. Syst.* iii, p. 472; *C. & S.* no. 2288.

Hyblæa rostrata, *Fabr. Syst. Ent.* iii, 2, p. 127; *C. & S.* no. 2291.

Hypocala plumicornis, *Guen. Noct.* iii, p. 75.

Hypocala angulipalpis, *Guen. Noct.* iii, p. 77; *C. & S.* no. 2286.

Hypocala efflorescens, *Guen. Noct.* iii, p. 77; *C. & S.* no. 2289.

Differs from *subsatura* in the head, thorax, and fore wing being paler. Hind wing with the orange area larger; the marginal black area reduced and the two orange spots conjoined. Underside with the black on fore wing reduced to two bars, and that on hind wing also much reduced.

The form *plumicornis* corresponds to *aspersa*, and *rostrata* to *limbata*.

Hab. E. and S. Africa; N.W. Himalayas; Canara; Nilgiris. *Exp.* 30–42 millim.

2391. **Hypocala moorei,** *Butl. A. M. N. H.* (6) x, 1892, p. 21.
Hypocala efflorescens, *Moore, Lep. Ceyl.* iii, pl. 160, figs. 5, 5 *a* (*nec Guen.*).

Differs from *deflorata* in the inner edge of the marginal band of hind wing being even; the orange spot absent; the small marginal spot elongate.

Hab. W. Africa; N.W. Himalayas; Sikhim; Canara; Ceylon. *Exp.* 44–56 millim.

2392. **Hypocala violacea,** *Butl. Trans. Ent. Soc.* 1879, p. 6.
Hypocala clarissima, *Butl. A. M. N. H.* (6) x, 1892, p. 21.

Differs from *subsatura* in the head, thorax, and fore wing being uniform red-brown, irrorated with dark specks. Underside with the black markings on fore wing reduced to two bars, and those on hind wing to a small cell-spot and bar towards anal angle.

In the Ceylon form, *clarissima*, the black markings on upperside of hind wing and underside of fore wing are rather narrower.

Hab. Ceylon; Cachar; Burma. *Exp.* 46 millim.

2393. **Hypocala biarcuata,** *Wlk. Cat.* xv, p. 1816.

Head, thorax, and fore wing pale brown, irrorated with black; abdomen yellowish, the last segment black, with pale anal tuft. Fore wing with a submarginal black line in the form of two curves touching the margin at apex, centre, and outer angle. Hind wing orange with marginal black band, broad at costa, and narrowing to anal angle; the cilia pale. Underside yellow; both wings with the costal areas ochreous and brown speckled, and with a submarginal black band not reaching costa or inner margin; fore wing with cell-spot.

Hab. Canara; Tenasserim. *Exp.* 40 millim.

2394. **Hypocala lativitta,** *Moore, P. Z. S.* 1877, p. 606, pl. 60, fig. 4; *C. & S.* no. 2290.

Differs from *biarcuata* in the fore wing being darker, with large patches of grey suffusion on inner area and on costa before apex; the submarginal line much less regular, and broken by diffused brown patches and black streaks at apex and centre. Hind wing with black cell-spot, prominent on underside.

Hab. Khásis; Nágas; Tenasserim; Andamans. *Exp.* 48 millim.

Genus PTEROCYCLOPHORA.

Pterocyclophora, *Hmpsn. Ill. Het.* ix, p. 109 (1893)

Type, *P. pictimargo*, Hmpsn.

Range. Ceylon; Java.

Palpi with the 2nd joint thickened and reaching vertex of head,

the 3rd obliquely porrect and naked; antennæ bipectinated with short branches in male; thorax and abdomen smoothly scaled; mid tibiæ spined and with terminal tuft; hind tibiæ with medial and terminal tufts. Fore wing with the costa highly arched; the apex produced and acute; the cilia highly crenulate. Hind wing with the outer margin produced to a point at vein 4; inner margin with a deep incision at middle forming a fringed lobe; the cilia highly crenulate; the cell of both wings somewhat short.

2395. **Pterocyclophora pictimargo**, *Hmpsn. Ill. Het.* ix, p. 110, pl. 165, fig. 16.

Head, thorax, and abdomen grey, irrorated with dark brown scales. Fore wing ochreous, with purplish suffusion and irrorated with dark brown scales; the reniform indistinct and pale ochreous; traces of a waved ferruginous medial line excurved round cell; a spot beyond the cell on vein 5; a straight submarginal ferruginous line bent outwards to apex, the area beyond it brown, with a series of antemarginal white strigæ. Hind wing yellow with ante- and

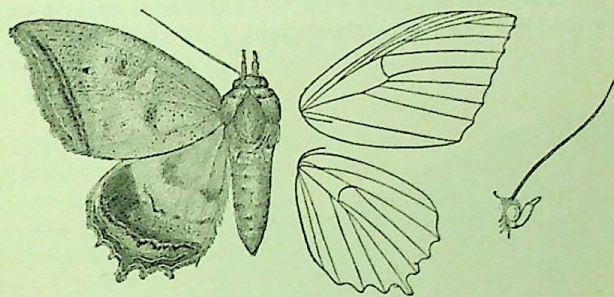



Fig. 256.—*Pterocyclophora pictimargo*, ♀. ½.

postmedial brown lines, the latter obsolete towards costa; the apical area fuscous; the outer area brown, inwardly edged by a purplish line, then a ferruginous line and some ferruginous suffusion; antemarginal and marginal white lines. Underside ochreous, irrorated with brown, except on inner area of fore wing, which has medial and postmedial brown bars; hind wing with three lines on inner area.

Hab. Ceylon; Java. *Exp.* 66 millim.

Genus ANISONEURA.

Anisoneura, *Guen. Noct.* iii, p. 160 (1852).

Type, *A. salebrosa*, Guen.

Range. Himalayas; Assam; Sylhet; Poona.

Palpi with the 2nd joint thickened and reaching vertex of head, the 3rd of moderate length; antennæ of male with minute fascicules of cilia; thorax quadrately scaled; abdomen with dorsal ridges of

hair; tibiæ but slightly hairy, the mid tibiæ spined. Fore wing with the costa arched towards apex; the cilia crenulate. Hind wing with the cilia crenulate; the cell short; vein 5 from lower angle of cell.

SECT. I. Fore wing produced at apex, the outer margin oblique; hind wing with veins 6 and 7 on a long stalk in male, a short stalk in female.

2396. **Anisoneura hypocyanea**, *Guen. Noct.* iii, p. 162; *C. & S.* no. 2530.

♂. Dark red brown, suffused with fuscous; the head and collar black; two black bars on thorax. Fore wing with a short irregularly dentate subbasal line; a very irregularly dentate antemedial line, oblique and prominent below the cell; a dark patch in end of cell; patches of yellow and black scales beyond and below end of cell; a highly crenulate postmedial oblique line; an indistinct double crenulate submarginal line; a lunulate black line near the margin. Hind wing with two indistinct antemedial lines; a crenulate medial black line; a nearly straight postmedial line, with an

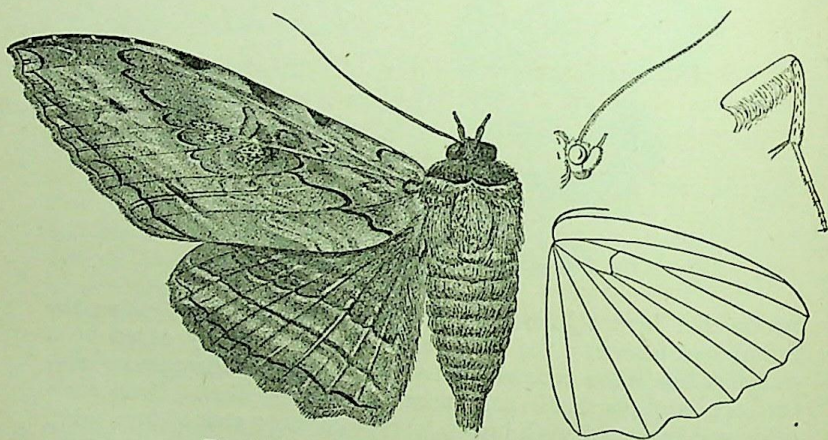



Fig. 257.—*Anisoneura hypocyanea*, ♂. ½.

indistinct line beyond it; a slightly sinuous submarginal line. Underside of fore wing with crenulate postmedial line; the outer area suffused with purple; hind wing suffused with purple and with some white on the veins; crenulate antemedial and medial lines.

♀ paler; the thorax and costa of fore wing as far as the postmedial line grey.

Hab. N.W. Himalayas; Sikhim; Assam. *Exp.* 90–124 millim.

SECT. II. Fore wing not produced at apex, the outer margin much less oblique; hind wing with veins 6 and 7 from cell.

2397. **Anisoneura salebrosa**, *Guen. Noct.* iii, p. 161; *C. & S.* no. 2531.

♀. Differs from *hypocyanea* in being darker, more uniformly suffused with fuscous, and with a purplish tinge; head and collar not black. Fore wing with the lines less oblique, without patches of yellow and black scales below and beyond cell; an ochreous patch beyond centre of postmedial line, with an oblique black streak above it. Hind wing with the postmedial line more waved and without the indistinct line beyond it. Underside pale without purplish suffusion and with two dark medial and a pale submarginal line.

Hab. Sylhet; Poona. *Exp.* 70 millim.

Genus SPIREDONIA.

Speiredonia, *Hübn. Verz.* p. 272 (1818).
Sericia, *Guen. Noct.* iii, p. 172 (1852).

Type, *S. feducia*, Stoll.

Range. Ethiopian, Oriental, and Australian regions.

Differs from the 2nd section of *Anisoneura* in the mid tibiæ not being spined.

2398. **Spiredonia anops**, *Guen. Noct.* iii, p. 173; *Moore, Lep. Ceyl.* iii, pl. 164, fig. 7; *C. & S.* no. 2555.

Black-brown shot with purple. Fore wing with waved subbasal, antemedial, and medial black lines; a spot in cell; a double postmedial waved line excurved from vein 2 to lower angle of cell; an

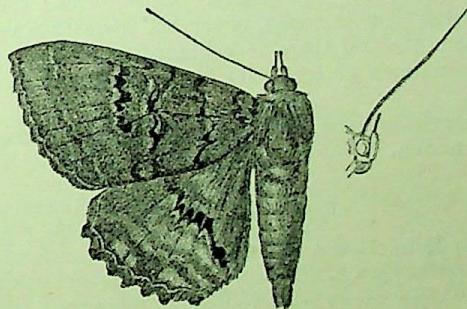



Fig. 258.—*Spiredonia anops*, ♂. 1/1.

indistinct sinuous submarginal double line. Hind wing with medial lunulate line and traces of a sinuous double submarginal line.

Hab. Throughout India, Ceylon, and Burma; Andamans; Australia. *Exp.* 70–78 millim.

2399. **Spiredonia alix,** *Guen. Noct.* iii, p. 171.
Tavia substruens, *Wlk. Cat.* xiv, p. 1276; *C. & S.* no. 2557.
Syrnia sparsa, *Wlk. Cat.* xiv, p. 1280.
Sericia calamistrata, *Moore, P. Z. S.* 1883, p. 26; *C. & S.* no. 2556.

Differs from *anops* in being fuscous brown with hardly any purple shot. Fore wing with two sinuations in the postmedial line beyond the cell, with black inside them and forming a figure 3, the line more regularly waved above inner margin; the double submarginal line regularly waved. Hind wing with the double waved submarginal line more prominent; underside with the inner area purplish, with black medial and white subanal spots.

Typical *alix* has some white suffusion on postmedial and submarginal lines of both wings, whilst *substruens* is uniformly dark.

Hab. Sind; N.W. and E. Himalayas; Assam; Andamans; Nicobars; Java. *Exp.* 56–64 millim.

2400. **Spiredonia feducia,** *Stoll, Cram. Pap. Exot.* v, pl. 36, fig. 3; *C. & S.* no. 2552.
Phalæna zamis, *Stoll, Cram. Pap. Exot.* v, pl. 36, fig. 11; *C. & S.* no. 2554.
Speiredonia retrahens, *Wlk. Cat.* xiv, p. 1294; *C. & S.* no. 2553.
Sericia parvipennis, *Wlk. Cat.* xiv, p. 1297.
Speiredonia conspicua, *Feld. Reis. Nov.* pl. 113, fig. 7.
Ommatophora albifascia, *Wlk. Cat.* xxxiii, p. 947.

Differs from *alix* in the middle loop of the figure 3 on fore wing being produced inwards almost to the discocellulars; a rufous spot in cell.

Feducia and *parvipennis* are small forms; the former has some purplish grey patches on both wings, the latter has ochreous patches on disk and centre of margin of both wings.

Zamis, *retrahens*, and *albifascia* are large forms; the first has purplish patches on both wings, in the 2nd these are very prominent; whilst in the 3rd there is ochreous or white suffusion on the submarginal area of fore wing and postmedial area of hind wing.

Hab. Throughout India, Ceylon, and Burma; Andamans; Java. *Exp.* 64–78 millim.

Genus **NYCTIPAO.**

Nyctipao, *Hübn. Verz.* p. 271 (1818).
Argiva, *Hübn. Verz.* p. 272.
Patula, *Guen. Noct.* iii, p. 176 (1852).

Type, *N. crepuscularis*, Linn.

Range. Ethiopian, Oriental, and Australian regions.

Differs from *Spiredonia* in the mid and hind tibiæ being spined and almost naked; the fore wing broader.

SECT. I. (*Patula*). Male with the costal half of hind wing aborted to form a fold turned over on the upper surface and containing a large glandular patch of flocculent hair; vein 4 running to the functional apex, 5 from centre of discocellulars, and 6 to the fold; 7 and 8 very minute to near base of costa.

2401. **Nyctipao macrops**, *Linn. Syst. Nat.* xii, iii, p. 225; *Moore, Lep. Ceyl.* iii, pl. 164, fig. 5; *C. & S.* no. 2533.
Noctua bubo, *Fabr. Sp. Ins.* ii, p. 209.
Patula boopis, *Guen. Noct.* iii, p. 178; *C. & S.* no. 2532.
Patula walkeri, *Butl. A. M. N. H.* (4) xvi, 1875, p. 406.

Fuscous brown, with a slight purplish tinge. Fore wing with short subbasal and waved antemedial and medial black lines; a very large fulvous ocellus beyond end of cell, with black outline and black comma-shaped pupil with blue streaks and specks on it; two irregularly waved postmedial lines excurved round the ocellus and bent inwards below it, the outer one expanding into a patch at costa; two sinuous series of black submarginal spots, the inner series indistinct and obsolete towards costa. Hind wing with medial black line excurved round cell; a postmedial series of lunules with two sinuous series of spots beyond them, the inner series least distinct. Underside with irregular postmedial series of white spots and regular submarginal series of lunules to each wing.

Walkeri, from Africa, has the black patch on costa of fore wing larger, the white spots on underside smaller.

♂ with tufts of orange hair in anal segment of abdomen round claspers.

Hab. Throughout Africa, Madagascar, India, Ceylon, and Burma. *Exp.* 134–160 millim.

SECT. II. (*Argiva*). Male with vein 3 running to the functional apex of hind wing; the costal fold obsolete, the glandular patch small.

A. *Male with veins 4 to 8 of hind wing moderately developed in the aborted costal area.*

2402. **Nyctipao hieroglyphica**, *Drury, Ill. Exot. Ins.* ii, p. 3, pl. ii, fig. 1; *C. & S.* no. 2535.
Phalæna mygdonia, *Cram. Pap. Exot.* ii, pl. 174, F.
Phalæna harmonia, *Cram. Pap. Exot.* ii, pl. 174, E.
Noctua ulula, *Fabr. Sp. Ins.* ii, p. 211, no. 9.

♂. Rich black-brown. Fore wing with a whorl-shaped black mark beyond end of cell, bilobed and expanding at head, where it is outlined with blue; an oblique yellow bar from costa near apex, in one specimen reaching outer margin.

♀. Brown, with black striæ; fore wing with the oblique bar white; both wings with traces of postmedial band of whitish marks and white spot on fore wing above vein 3.

Hab. Madagascar; throughout India, Ceylon, and Burma; Malacca; Philippines; Java; Ternate. *Exp.* 88 millim.

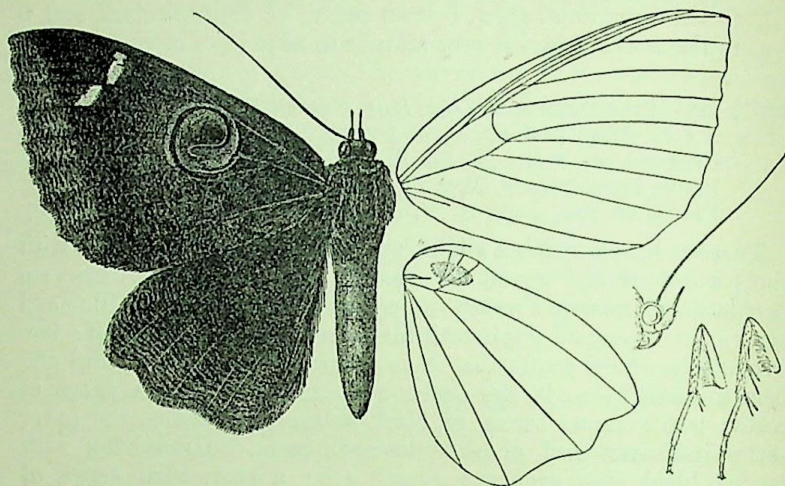



Fig. 259.—*Nyctipao hieroglyphica*, ♂. ½.

2403. **Nyctipao caprimulgus**, *Fabr. Sp. Ins.* ii, 210, no. 6; *C. & S.* no. 2534.

Nyctipao exterior, *Wlk. Cat.* xiv, p. 1306; *Butl. Ill. Het.* vi, pl. 112, fig. 3; *C. & S.* no. 2540.
Nyctipao obliterans, *Wlk. Cat.* xiv, p. 1307.
Nyctipao truncata, *Moore, P. Z. S.* 1877, p. 608; *C. & S.* no. 2544.

♂. Differs from *hieroglyphica* in having the whorl on fore wing larger; the yellow subapical bar absent. Abdomen with tufts of orange hair in anal segment round claspers.

♀. The form *obliterans* is like the male, but with indistinct antemedial line to fore wing and line from the whorl to inner margin; hind wing with traces of sinuous medial line. In the form *exterior* there is a sinuous postmedial white line on both wings, broad and angled near costa of fore wing, the outer area suffused with grey or sometimes mostly white on hind wing. Another form is brown, the wings suffused with black as far as the postmedial line. Underside with irregular postmedial series of white spots to both wings.

Hab. Throughout India, Ceylon, and Burma. *Exp.* 90–104 millim.

B. *Male with the glandular patch and veins 4 to 8 of hind wing still more reduced.*

2404. **Nyctipao strigipennis**, *Moore, P. Z. S.* 1883, p. 25; *C. & S.* no. 2536.

Differs from the female of *hieroglyphica* in having the oblique subapical bar of fore wing brown and indistinct.

The male has both wings suffused with black as far as the postmedial line; the abdomen black.

Hab. Khásis; Nilgiris. *Exp.* 86 millim.

2405. **Nyctipao crepuscularis**, *Linn. Syst. Nat.* i, 2, p. 811; *Moore, Lep. Ceyl.* iii, pl. 165, fig. 1–1 *a*; *C. & S.* no. 2539.
Nyctipao ephesperis, *Hübn. Verz.* p. 272.
Nyctipao lætitia, *Butl. Ill. Het.* iii, p. 26, pl. 47, fig. 9.

Head and thorax dark brown; abdomen usually paler, with pale bands at base. Fore wing dark brown, with indistinct sinuous antemedial line; the mark at end of cell shaped like an 'inverted comma,' and brown with black edges, the 'head' slightly bilobed and with only a few blue scales; a black line highly angled beyond cell, then running to near base of inner margin, and with a broad fulvous or white band beyond it; an indistinct sinuous postmedial line, and submarginal irregularly lunulate black line, with some white marks on it, the mark at costa usually larger; the outer area suffused with grey, except a large triangular patch on costa before apex. Hind wing with pale basal band, with black line beyond it; a slightly waved medial line, with some long whitish hair beyond it; an irregularly lunulate submarginal black line, bent inwards between veins 3 and 6, usually with white marks on it and a patch at costa; the outer area fulvous brown except at apex.

Hab. Japan; China; throughout India, Ceylon, and Burma; Sumatra; Java; Borneo; Philippines. *Exp.* 96–110 millim.

2406. **Nyctipao gemmans**, *Guen. Noct.* iii, p. 182; *C. & S.* no. 2541.

Black-brown. Fore wing with indistinct antemedial line; the stigma as in *crepuscularis*, but larger and with toothed inner edge; the postmedial line curved and bent inwards below the stigma; an evenly curved white submarginal band, with yellowish edge and some specks beyond it across both wings. Hind wing with indistinct subbasal and medial lines.

Hab. Sylhet. *Exp.* 82 millim.

2407. **Nyctipao albicincta**, *Koll. Hügel's Kaschmir*, iv, p. 474, pl. 22 (1844); *C. & S.* no. 2537.
Erebus rivularis, *Westw. Cab. Or. Ent.* p. 57, pl. 28, fig. 3.

Metallic blue-black. Fore wing with the whorl-shaped stigma large and on a greenish patch, with brick-red in the centre, the black head with a blue patch, two white specks and some white scales on it; a curved ochreous white submarginal narrow band to both wings, with angles in it above veins 3 and 6 of hind wing and vein 3 of fore wing; the cilia and veins at margin of both wings ochreous white.

Hab. N.W. Himalayas; Sikhim; Khásis; Shillong; ? Nilgiris. *Exp.* 110–130 millim.

2408. **Nyctipao glaucopis**, *Wlk. Cat.* xiv, p. 1306; *Butl. Ill. Het.* vi, pl. 112, fig. 4; *C. & S.* no. 2542.
Nyctipao prunosa, *Moore, P. Z. S.* 1883, p. 26; *C. & S.* no. 2543.

Purplish fuscous. Fore wing with the whorl-shaped stigma as in *hieroglyphica*. Underside with curved series of white spots, which show slightly on upperside, the two at costa of hind wing being prominent.

A variety has an irregular postmedial white line and the cilia white.

Hab. N.W. Himalayas; Sikhim; Khásis. *Exp.* 84–108 millim.

Genus HYLODES.

Hulodes, *Guen. Noct.* iii, p. 207 (1852).

Type, *H. caranea*, Cram.

Range. Formosa; throughout India, Ceylon, and Burma; Malacca; Java.

Palpi with the 2nd joint reaching vertex of head, the 3rd minute in male, of moderate length in female; antennæ simple; thorax and abdomen clothed with coarse hair; tibiæ not spined; male with the tibiæ, the 1st tarsal joint of mid legs, and all the joints of hind legs fringed with long hair. Fore wing with the costa arched towards apex, which is somewhat falcate. Hind wing with the cell short; vein 5 from close to lower angle.

Larvæ with four pairs of abdominal prolegs, the first rudimentary.

SECT. I. Hind wing with the outer margin crenulate and produced to a point at vein 4.

2409. **Hylodes caranea**, *Cram. Pap. Exot.* iii, pl. 269 E, F; *Moore, Lep. Ceyl.* iii, pl. 166, figs. 3, 3 *a*, & pl. 167, fig. 6 (larva); *C. & S.* no. 2575.

♂. Fuscous brown. Wings suffused with purplish as far as

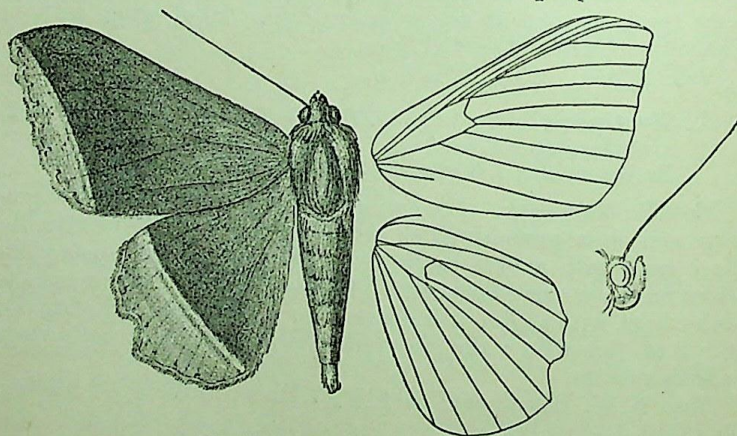



Fig. 260.—*Hylodes caranea*, ♂. ½.

the curved submarginal line which runs from the apex to inner margin of hind wing, the area beyond it ochreous brown with a

marginal series of specks; fore wing with traces of ante- and post-medial waved lines and brown-centred ochreous lunule at end of cell; hind wing with traces of antemedial waved line. Underside with crenulate medial line; hind wing with black cell-spot and spot at middle of costa.

♀. Pale ochreous brown, with some dark brown suffusion inside the oblique line, which is double; some specimens with a black spot on centre of inner margin of fore wing.

Larva with two pointed dorsal tubercles on anal somite; olive-green, speckled with fuscous and paler below; dorsal and lateral bands of black streaks; some greenish-white blotches on back and sides; the stigmata black; the tubercles reddish. Food-plant *Acanthads*.

Hab. Formosa; throughout India, Ceylon, and Burma; Java. *Exp.* 84–90 millim.

SECT. II. Hind wing with the outer margin hardly crenulate and but slightly angled at vein 4.

2410. **Hylodes drylla**, *Guen. Noct.* iii, p. 209, pl. 24, fig. 10.
Hulodes saturnioides, *Guen. Noct.* iii, p. 209; *C. & S.* no. 2577.
Hypopyra restorans, *Wlk. Cat.* xiv, p. 1328; *C. & S.* no. 2576.

♂. Differs from *caranea* in being ochreous brown; the head and collar dark. Fore wing uniform, with the postmedial line more oblique towards inner margin, often dentate and with fuscous suffusion beyond it.

♀ paler ochreous brown, with no dark suffusion inside the post-medial line.

Hab. N.W. Himalayas; Assam; Calcutta; Burma; Perak. *Exp.*, ♂ 72, ♀ 76 millim.

Genus **AGONISTA**.

Agonista, *Rogenhoff, Feld. Reis. Nov., Lep.* iv, pl. 113, fig. 5 (1864–67).
Lygniodes, *Guen. Noct.* iii, p. 123 (1852), præocc.

Type, *A. hypoleuca*, Guen.

Range. Himalayas; Nilgiris; Travancore; Ceylon; Assam; Burma; Malacca; Borneo; Java.

Palpi with the 2nd joint reaching vertex of head, the 3rd of moderate length; antennæ simple; thorax and abdomen smoothly scaled; mid tibiæ spined; hind tibiæ slightly fringed with hair. Fore wing with the costa arched; the apex slightly produced and acute. Hind wing with the cell very short; vein 5 from near lower angle; 6 much curved.

2411. **Agonista hypoleuca**, *Guen. Noct.* iii, p. 125; *C. & S.* no. 2495.

♂. Black-brown, shot with purple; cilia of both wings white. Underside of thorax and abdomen ochreous; the wings white; fore wing striated with brown, and the basal, costal, and apical areas brown; hind wing slightly speckled with brown, and some brown near apex.

♀. Dull brown, with darker striæ; a curved medial dark line to both wings and submarginal series of pale specks; hind wing

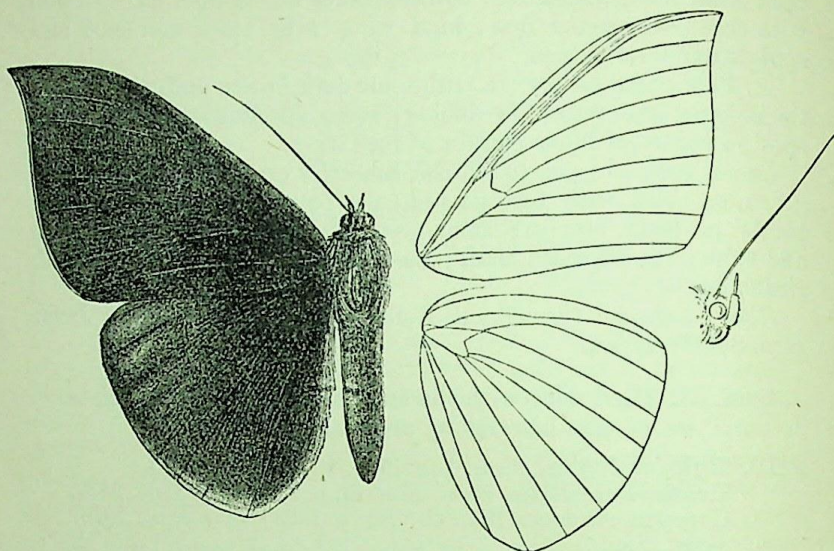



Fig. 261.—*Agonista hypoleuca*, ♂. ½.

with pale postmedial line. Underside much browner than in male; a cell-spot, postmedial line, and series of submarginal specks to each wing.

Hab. Sikhim; Bhutan; Assam; Moulmein. *Exp.*, ♂ 92, ♀ 100 millim.

2412. **Agonista endoleuca,** *Guen. Noct.* iii, p. 124; *C. & S.* no. 2494.

♂. Differs from *hypoleuca* in the inner area of hind wing being pure white. Underside of fore wing brown, of hind wing white with brown striæ, and the apex brown in the Burmese form, whilst in the typical form from Java the white is confined to the inner area and the abdomen has the extremity yellow above.

Hab. Tenasserim; Malacca; Java. *Exp.* 94 millim.

2413. **Agonista reducens,** *Wlk. Cat.* xiii, p. 1236; *Moore, Lep. Ceyl* iii, pl. 163, figs. 3, 3 *a*; *C. & S.* no. 2496.
Lygniodes reducens, *var.* E-antiqua, *Hmpsn. Ill. Het.* viii, p. 89.
Lygniodes ciliata, *Moore, P. Z. S.* 1867, p. 69; *C. & S.* no. 2493.
Lygniodes disparans, *Wlk. Cat.* xv, p. 1817.

♂. Differs from *hypoleuca* in being duller and greyer brown. Underside brown; the hind wing greyish white with brown striæ, except on costal area.

♀. The underside browner than in *hypoleuca*. The variety *E-antiqua* has a stigma in the shape of the old English letter ∈ at end of cell of fore wing.

Hab. Sikhim; Nilgiris; Travancore; Ceylon. *Exp.* 84 millim.

Genus POLYDESMA.

Polydesma, *Boisd. Faun. Ent. Madag., Lep.* p. 108 (1833).
Pandesma, *Guen. Noct.* ii, p. 438 (1852).
Felinia, *Guen. Noct.* iii, p. 322 (1852).
Briarda, *Wlk. Cat.* xiii, p. 1097 (1857).
Ericeia, *Wlk. Cat.* xiii, p. 1089.
Talariga, *Wlk. Cat.* xv, p. 1634 (1858).
Girpa, *Wlk. Cat.* xv, p. 1849.
Belciana, *Wlk. Journ. Linn. Soc.* vi, p. 182 (1862).
Beana, *Wlk. Journ. Linn. Soc.* vi, p. 183.
Bamra, *Moore, Lep. Atk.* p. 159 (1882).
Vapara, *Moore, Lep. Atk.* p. 163.
Oromena, *Moore, Lep. Atk.* p. 160.
Pitacota, *Moore, Lep. Ceyl.* iii, p. 46 (1885).
Koptoplax, *Hmpsn. Ill. Het.* viii, p. 126 (1891).

Type, *P. umbricola*, Boisd.

Range. Ethiopian region; Japan; China; Oriental and Australian regions.

Palpi upturned; the 2nd joint reaching vertex of head; thorax smoothly scaled; abdomen with usually slight basal ridges and tufts of hair; tibiæ without spines and more or less fringed with hair. Fore wing with the apex somewhat rounded. Hind wing with vein 5 from above angle of cell.

Larvæ with four pairs of abdominal prolegs, the first two pairs rudimentary.

SECT. I. Antennæ of male minutely ciliated.

A. *Palpi with the 3rd joint short.*

a. (Pandesma). *Male with the base of hind wing smoothly scaled on underside.*

a'. *Mid legs of male with no tuft of long hair from the femoro-tibial joint.*

2414. **Polydesma mundata,** *Wlk. Cat.* xv, p. 1701; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 14, pl. 176, fig. 7 (larva).
Bamra acronyctoides, *Moore, Lep. Atk.* p. 160; *C. & S.* no. 2432.

Grey, suffused with pale red-brown; palpi black at base; the collar rufous. Fore wing with sinuous subbasal, antemedial, postmedial, and submarginal indistinct lines; an oblique black streak from centre of costa to centre of submarginal line, crossing a longitudinal streak from the discocellulars to the submarginal line; some black streaks from the submarginal line towards outer margin, the streak above outer angle extending within the line. Hind wing white; the outer area more or less suffused with fuscous.

Larva. Dull brownish green above, in some specimens purplish; whitish below; two small yellowish dorsal spots on each somite except the first and last; a hump on the eleventh somite. Food-plant, *Albizzia.* Spins a cocoon amongst grass and leaves, and secretes a whitish powder from ventral area when pupating.

Hab. Kangra; Ceylon. *Exp.* 44 millim.

2415. **Polydesma albicola**, *Wlk. Cat.* xiv, p. 1515; *C. & S.* no. 2433.
Agriopis discalis, *Moore, P. Z. S.* 1867, p. 57, pl. vii, fig. 2; *C. & S.* no. 2434.
Bamra diplostigma, *Hmpsn. Ill. Het.* ix, p. 109, pl. 163, fig. 7.

Differs from *mundata* in being white, very slightly suffused with fuscous. Fore wing with traces of numerous waved fuscous lines; the subbasal and antemedial black lines arising from black spots on the costa; beyond the end of cell is a black streak with incomplete loops above and below it, thus forming a very incomplete figure of 8. Hind wing with the base white; the outer two-thirds fuscous, with a white streak at anal angle. Underside with nearly the whole fore wing and outer half of hind wing suffused with fuscous.

The form *diplostigma*, from Ceylon, is whiter; a fuscous patch on the costa above the mark at end of cell; hind wing and underside very slightly fuscous.

Hab. Sikhim; Assam; Ceylon. *Exp.* 54 millim.

2416. **Polydesma turbata**, *Wlk. Cat.* xv, p. 1720; *C. & S.* no. 1930.

♀. Fuscous brown; the vertex of head white. Fore wing with traces of numerous waved black lines; a large white basal patch not reaching costa or inner margin and conjoined to a large patch in end of cell, extending upwards to the costa; a large patch on the apical part of costa, with two brown marks on it at the origin of the postmedial and submarginal lines. Underside of hind wing with indistinct curved postmedial line.

Hab. "N. India." *Exp.* 46 millim.

2417. **Polydesma sublimis**, *Feld. Reis. Nov.* pl. 111, fig. 23; *C. & S.* no. 2445.
Agriopis lepida, *Moore, P. Z. S.* 1867, p. 56; *C. & S.* no. 2435.

White, with a slight yellowish suffusion; the base of palpi black. Fore wing with subbasal and antemedial slightly sinuous black lines, the area between them suffused with red-brown; the antemedial line with a prominent black spot below the cell; an indistinct speck in cell; a grey lunule at end of it; indistinct double medial and postmedial waved lines and irregularly sinuous submarginal line; the costal half of this postmedial area suffused with red-brown and parts of the inner half with greenish grey; two black spots on the postmedial line; a crenulate marginal line. Hind wing white; the outer area suffused with fuscous; a series of black marginal lunules.

In Sikhim specimens the dark markings of the fore wing are more extensive.

Hab. N.W. Himalayas; Sikhim. *Exp.* 48 millim.

2418. **Polydesma quenavadi**, *Guen. Noct.* ii, p. 438; *Moore, Lep. Ceyl.* iii, pl. 156, fig. 1; *C. & S.* no. 2443.
Pandesma anysa, *Guen. Noct.* ii, p. 439.

Cerbia fugitiva, *Wlk. Cat.* xiv. p. 1365.
Pandesma jubra, *Swinh. P. Z. S.* 1889, p. 413, pl. 44, fig. 4.
Pandesma similata, *Moore, P. Z. S.* 1883, p. 24; *C. & S.* no. 2444.

Brownish grey. Fore wing with subbasal, antemedial, medial, excurved postmedial, and submarginal waved lines; the orbicular and reniform indistinct; a marginal series of specks. Hind wing with the basal area whitish; the outer brownish, with postmedial and submarginal indistinct waved lines. Underside white, with a broad submarginal fuscous band and marginal series of black specks to each wing.

The form *jubra*, from Burma, is lilacine grey, with some ochreous on head and collar; abdomen ringed with ochreous. Fore wing with a black speck on antemedial line; a brown diffused submarginal band. Hind wing with the outer area black. A Ceylon specimen is still darker.

Hab. Throughout India, Ceylon, and Burma. *Exp.* 40–56 millim.

2419. **Polydesma fasciata**, *Moore, Lep. Atk.* p. 163; *C. & S.* no. 2358.

♂. Olive-brown, suffused with fuscous. Fore wing with indistinct subbasal and antemedial sinuous black lines; the area between them suffused with black; the reniform small, with dark outline; traces of a dentate medial line; an irregularly dentate postmedial line bent inwards below end of cell; an irregular submarginal line, with slight black suffusion on it near apex and inner margin. Hind wing dark fuscous; the cilia pale brown; underside with cell-spot and indistinct sinuous medial line; the apex of each wing with a vinous tinge.

Hab. Sikhim. *Exp.* 42 millim.

2420. **Polydesma catenata**, *Moore, Lep. Ceyl.* iii, p. 550, pl. 214, fig. 10; *C. & S.* no. 2459.
Panilla apicalis, *Butl. Ill. Het.* vii, p. 74, pl. 132, fig. 1.

Pale red-brown. Fore wing with some black spots on the costa and some subbasal blackish patches; an antemedial sinuous line; two indistinct medial lines excurved at end of cell; a postmedial black line excurved between veins 3 and 5, and with a black patch beyond it from the costa to vein 3 with some blue scales on it; traces of a sinuous submarginal band; a marginal lunulate line. Hind wing with indistinct lunule at end of cell and medial sinuous line; a sinuous black postmedial line; traces of a submarginal line; a fine marginal black crenulate line.

Hab. Dharmsála; Ceylon. *Exp.* 24 millim.

2421. **Polydesma vetusta**, *Wlk. Cat.* xxxiii, p. 875; *C. & S.* no. 2467.

Grey, irrorated with fuscous. Fore wing with waved antemedial narrow dark band; traces of medial waved line; a spot at end of cell; a postmedial waved black line excurved beyond cell and with an indistinct fuscous line beyond it; traces of a submarginal sinuous line. Hind wing with traces of medial line; a

postmedial waved black line with an indistinct fuscous line beyond it; a submarginal indistinct waved line.

Hab. Karáchi; Mhow. *Exp.* 84 millim.

b'. *Mid legs of male with a tuft of long hair from the femoro-tibial joint.*

2422. **Polydesma costimacula,** *Guen. Noct.* ii, p. 429; *C. & S.* no. 2293.
Remigia triangulata, *Wlk. Cat.* xxxiii, p. 1017.

Ochreous-brown; the head and collar black; abdomen tinged with fuscous. Fore wing with antemedial, postmedial, and submarginal black patches on costa; a dark line on discocellulars, expanding into a small square spot at lower angle of cell; traces of waved medial, postmedial, and submarginal lines and of twô fuscous submarginal spots. Hind wing with the apical area fuscous, continued to inner margin as a diffused submarginal band.

Hab. Sylhet. *Exp.* 46 millim.

b. (Polydesma). *Male with the basal area of hind wing clothed with long silky hair on underside.*

2423. **Polydesma umbricola,** *Boisd. Faun. Ent. Madag., Lep.* p. 108, pl. 13, fig. 5.
Polydesma laudula, *Guen. Noct.* ii, p. 441.
Polydesma boarmoides, *Guen. Noct.* ii, p. 441; *Moore, Lep. Ceyl.* iii, pl. 156, fig. 2; *C. & S.* no. 2446 (part.).
Polydesma mastrucata, *Feld. Reis. Nov.* pl. 111, fig. 31.
Polydesma scriptilis, *Guen. Noct.* ii, p. 442; *C. & S.* no. 2449.

Brown suffused with fuscous. Fore wing with indistinct waved subbasal, antemedial, medial, and postmedial lines, each arising from a black spot on the costa; a crenulate pale submarginal line with some fuscous suffusion inside it; a marginal series of lunulate spots. Hind wing with indistinct antemedial and medial sinuous lines; a crenulate submarginal pale line with fuscous suffusion inside it; a marginal series of lunulate spots. Underside with the area inside the crenulate submarginal line of both wings broadly suffused with fuscous.

Hab. W. and S. Africa; Madagascar; Formosa; throughout India, Ceylon, and Burma; Andamans. *Exp.* 50 millim.

2424. **Polydesma otiosa,** *Guen. Noct.* ii, p. 442; *C. & S.* no. 2448.
Alamis brevipalpis, *Wlk. Cat.* xiii, p. 1051; *C. & S.* no. 2446 (part.).

Differs from *umbricola* in being smaller and paler; the fuscous suffusion on underside confined to the costal area of hind wing; the whole of the hind wing being silky ochreous in male.

Hab. N.W. Himalayas; Sylhet; Nilgiris. *Exp.* 44 millim.

B. *Palpi with the 3rd joint longer.*

a. *Hind legs of male tufted with long hair to the extremity of the tarsi.*

a'. (Felinia). *Mid tibiæ of male with no masses of flocculent hair contained in a fold.*

2425. **Polydesma spissa,** *Guen. Noct.* iii, p. 322; *C. & S.* no. 2706.
Briarda decens, *Wlk. Cat.* xiii, p. 1098; *Butl. Ill. Het.* vi, pl. 110, fig. 6; *C. & S.* no. 2339.

Grey-brown. Fore wing with numerous indistinct waved lines; an antemedial waved line dentate on vein 2 and with a diffused red-brown band inside it; a dark line on discocellulars, with an ill-defined brownish patch on the costa above it; a postmedial waved line excurved beyond the cell; a triangular patch on costa before apex. Hind wing with the basal area ochreous; the outer fuscous; a pale streak at anal angle; cilia pale at apex and anal angle.

Hab. Throughout India, Ceylon, and Burma; Andamans. *Exp.* 42–50 millim.

2426. **Polydesma præcedens,** *Wlk. Cat.* xiii, p. 1098; *Butl. Ill. Het.* vi, pl. 110, fig. 7; *C. & S.* no. 2340.
Briarda antecedens, *Wlk. Cat.* xiii, p. 1099.

♂. Pale reddish brown. Fore wing with numerous indistinct waved dark lines; a dark brown patch on base of costa; a waved antemedial line: a large subtriangular medial patch on the costa extending to vein 2 and bounded by the postmedial line, which is recurved round its lower end and then obsolete; a dark apical patch with a black streak on it; a crenulate marginal line. Hind wing fuscous; underside with cell-spot and indistinct medial line.

♀ with a dark spot on fore wing below the cell on the antemedial line.

Hab. "India;" Ceylon; Sumatra. *Exp.*, ♂ 52, ♀ 44 millim.

2427. **Polydesma metaspila,** *Wlk. Cat.* xiii, p. 1032; *Moore, Lep. Ceyl.* iii, pl. 154, fig. 6; *C. & S.* no. 2296.
Ophiusa pallidilinea, *Wlk. Cat.* xv, p. 1832.
Toxocampa moola, *Swinh. P. Z. S.* 1885, p. 459, pl. 27, fig. 10; *C. & S.* no. 2297.
Hypætra sordida, *Butl. Trans. Ent. Soc.* 1886, p. 414.

Ochreous brown; the collar black. Fore wing irrorated with dark brown; a comma-shaped black mark above inner margin before middle; faint traces of the orbicular and reniform; a postmedial ochreous brown-edged line, with a series of fuscous marks beyond it. Hind wing pale, with diffused medial band; the outer area fuscous

Hab. Poona; Nilgiris; Ceylon; Java; Fiji. *Exp.* 42 millim.

2428. **Polydesma rectivitta,** *Moore, P. Z. S.* 1881, p. 353; *C. & S.* no. 1917.

♀. Differs from *metaspila* in being darker and less uniform in colour; the collar not black. Fore wing with no spot above inner

margin; an indistinct lunulate oblique antemedial narrow band; the orbicular and reniform spots large and very indistinct; an oblique narrow postmedial band with some white specks on the veins beyond it; an irregularly dentate submarginal line with diffused fuscous on its inner edge; a marginal series of specks. Hind wing dark fuscous; the cilia ochreous.

Hab. Sikhim. *Exp.* 46 millim.

b′. (Ericia). *Mid tibiæ of male with large masses of flocculent hair contained in a fold.*

2429. **Polydesma inangulata,** *Guen. Noct.* iii, p. 210; *Moore, Lep. Ceyl.* iii, pl. 156, figs. 6, 6 *a*; *C. & S.* no. 2472.
Hulodes eriophora, *Guen. Noct.* iii, p. 210; *C. & S.* no. 2470.
Ericeia sobria, *Wlk. Cat.* xiii, p. 1089.
Ophisma deficiens, *Wlk. Cat.* xiv, p. 1383.
Remigia optativa, *Wlk. Cat.* xiv, p. 1510.
Remigia congressa, *Wlk. Cat.* xiv, p. 1510.
Remigia perfidiosa, *Wlk. Cat.* xiv, p. 1511.
Remigia pertendens, *Wlk. Cat.* xiv, p. 1512; *C. & S.* no. 2473.
Remigia congregata, *Wlk. Cat.* xv, p. 1847; *C. & S.* no. 2700.
Remigia optatura, *Wlk. Cat.* xv, p. 1848.
Remigia amanda, *Wlk. Cat.* xv, p. 1848.
Girpa aliena, *Wlk. Cat.* xv, p. 1849.
Remigia comitata, *Wlk. Cat.* xxxiii, p. 1018.
Hypopyra apicalis, *Wlk. Journ. Linn. Soc.* vii, p. 178.
Girpa fraterna, *Moore, Lep. Ceyl.* iii, p. 94, pl. 156, figs. 5, 5 *a*; *C. & S.* no. 2471.
Hulodes umbrosa, *Wlk. Char. Undescr. Het.* p. 91.

Violaceous grey, ochreous, reddish or fuscous brown, more or less irrorated with fuscous. Fore wing with subbasal, antemedial, medial, postmedial, and submarginal indistinct sinuous dark lines; the minute orbicular and large reniform spots indistinct; an almost

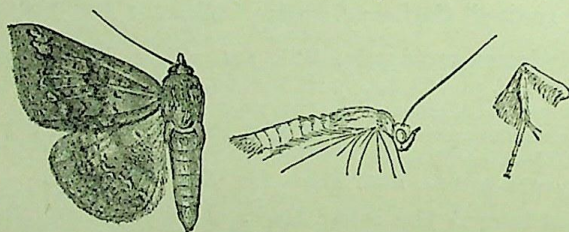



Fig. 262.—*Polydesma inangulata*, ♂. ½.

marginal series of dark specks. These markings may all be almost obsolete or fairly prominent; each line may be double and consist of disjoined strigæ or lunules; inside the submarginal and medial lines the area is often suffused with fuscous, or in the form *eriophora* with ferruginous, this form having the reniform elongate, prominent, and ferruginous; a grey apical patch is often present in the ochreous forms and a dark spot on the submarginal line above inner margin. Hind wing with indistinct medial line, with crenulate line beyond it; a waved submarginal line and almost marginal series of dark specks;

the submarginal line often has dark suffusion inside, and in the form *eriophora* there are some rufous patches on it.

In one specimen the outer area of both wings is bluish white.

Hab. Natal; China; throughout India, Ceylon, and Burma; Andamans; Australia. *Exp.* 48-54 millim.

b. (Belciana). *Hind legs of male not tufted with long hair.*

2430. **Polydesma tetraspila**, *Wlk. Cat.* xxxiii, p. 1018; *C. & S.* no. 2302.

Differs from *costimacula* (p. 468) in the vertex of head being grey. Fore wing with the antemedial costal patch minute or absent, the submarginal much further from the apex; no dark mark on discocellulars; medial, postmedial, and submarginal faint lines more regularly waved; a sinuous black mark is sometimes present on the medial line from vein 3 to inner margin and a series of specks on postmedial line. Hind wing with very indistinct ante- and postmedial, submarginal and marginal fuscous bands.

Hab. Simla; Sikhim. *Exp.* 48 millim.

2431. **Polydesma capacior**, *Wlk. Cat.* xv, p. 1634.

Yellowish brown, the head and collar fulvous. Fore wing with traces of subbasal line; a sinuous antemedial line; the orbicular a dark-ringed grey speck; a similar speck on origin of vein 2; the reniform a similar large rounded spot with some dark marks on it; a highly crenulate postmedial line bent inwards below end of cell; an irregularly sinuous submarginal pale line with fuscous suffusion on each side of it. Hind wing with indistinct ring-spot at end of cell; an irregularly dentate postmedial line. Underside suffused with orange fulvous.

In some specimens the basal and costal areas of fore wing are suffused with brownish ochreous.

Hab. Khásis; Singapore; Sumatra. *Exp.* 48 millim.

2432. **Polydesma biformis**, *Wlk. Cat.* xv, p. 1671.
Pandesma hemodi, *Feld. Reis. Nov.* pl. 111, fig. 25; *C. & S.* no. 2442.

Head pale and dark brown, the vertex green; thorax green, the base of collar brown; abdomen pale fuscous. Fore wing white, suffused with pale bright green; a large subbasal red-brown patch on the costa with a black streak below it; a white spot in cell; an indistinct medial line arising from a red-brown spot on the costa and slightly excurved round cell; traces of a lunulate white postmedial line; a large red-brown patch with black inner edge occupying the whole apical area and a smaller similar patch at outer angle. Hind wing fuscous brown, the basal and inner areas pale. Underside suffused with fuscous.

Hab. Nilgiris; Ceylon; Borneo. *Exp.* 52 millim.

2433. **Polydesma eurychlora**, *Wlk. Cat.* xv, p. 1670; *C. & S.* no. 2437.

Differs from *biformis* in the abdomen being yellow; the hind

wing bright yellow; the outer area fuscous brown, with some whitish streaks near anal angle. Underside with broad submarginal band to both wings.

Hab. Sikhim; Canara; Nilgiris. *Exp.* 52 millim.

*2434. **Polydesma? catocalina,** *Moore, Lep. Atk.* p. 156, pl. 5, fig. 3; *C. & S.* no. 2259.

♀. Head and thorax ochreous-grey; abdomen ochreous. Fore wing olive-grey; a broad basal brownish band not reaching inner margin and outwardly bordered by a straight line; a narrow medial waved band enclosing a large reniform spot; a curved postmedial line with a band beyond it, widest at costa and sending a spur to middle of outer margin; a marginal series of specks. Hind wing ochreous, with a marginal brownish band narrowing to anal angle.

Hab. Sikhim. *Exp.* 40 millim.

2435. **Polydesma ornata,** *Moore, P. Z. S.* 1883, p. 23, pl. 6, fig. 3; *C. & S.* no. 2438.

♂. Head and thorax clothed with rufous and dark brown scales; abdomen yellow, with the dorsal tufts black. Fore wing red-brown, with large greenish-grey patches on inner basal area and on central outer area; double-waved subbasal, ante- and postmedial lines filled in with greenish grey, the last excurved; the orbicular and reniform whitish, the latter with black centre; a greenish spot on costa before apex. Hind wing yellow; the outer area reddish fuscous, with a white striga near anal angle.

Hab. Bombay. *Exp.* 48 millim.

*2436. **Polydesma thoracica,** *Moore, Lep. Atk.* p. 161, pl. 5, fig. 7; *C. & S.* no. 2440.

♀. Head and thorax olive-yellow; palpi and collar chestnut; abdomen fuscous. Fore wing chestnut, with very ill-defined basal, antemedial, and postmedial conjoined bands of olive-grey blotches traversed by interrupted sinuous black lines; the orbicular and reniform represented by white spots; a submarginal waved olive-grey fascia; a series of cilial specks. Hind wing fuscous, darkest towards the outer margin; a curved postmedial pale line with a white line on it above anal angle; a submarginal series of white specks and a streak at anal angle; cilia tipped with white.

Hab. Sikhim. *Exp.* 58 millim.

2437. **Polydesma striatovirens,** *Moore, P. Z. S.* 1883, p. 23, pl. 6, fig. 2; *C. & S.* no. 2439.

♂. Palpi pale brown; head and thorax blue-green variegated with brown; abdomen yellowish fuscous. Fore wing blue-green, evenly variegated with red-brown; indistinct subbasal, antemedial, postmedial, and submarginal waved black lines; a marginal series of black specks; some whitish specks on costa. Hind wing fuscous, with traces of a medial line; the base pale; a blue-green patch

towards anal angle; underside with cell-spot and waved postmedial line.

Hab. Sikhim; Khásis. *Exp.* 60 millim.

2438. **Polydesma lichenoides**, n. sp.

♀. Head, thorax, and abdomen pinkish ochreous; palpi banded with black; collar fringed with green; the patagia green; abdomen with the large medial dorsal tuft black in front and the terminal segment black, the anal tuft ochreous. Fore wing sap-green; a basal black patch; an antemedial black band, obsolescent below the cell and with pinkish suffusion on each side of it; a black and white spot and pinkish patches at end of cell; a medial black band, obsolescent below cell; an irregularly waved postmedial line arising from a black patch on the costa, with some pink inside it and blue-grey outside; some irregular black and grey marks on outer area from middle to outer angle; a marginal series of black and white specks. Hind wing pale yellow, with indistinct ante- and post-medial lines and broad blackish marginal band with black and white streak at anal angle; cilia of both wings fulvous, black, and white. Underside ochreous, irregularly banded and blotched with black.

Hab. Nágas, 6000 feet (*Doherty*). *Exp.* 44 millim. Type in coll. Elwes.

2439. **Polydesma terminigera**, *Wlk. Cat.* xv, p. 1850; *Moore, Lep. Ceyl.* iii, pl. 149, fig. 7; *C. & S.* no. 1817.

♀. Head and thorax whitish; abdomen pale fuscous. Fore wing pale red-brown, with indistinct waved subbasal and antemedial, sinuous postmedial, and dentate submarginal lines; a large white triangular patch from costa before middle to base and outer angle on inner margin; a white apical costal patch, crossed by the post-medial and submarginal lines. Hind wing pale, with indistinct postmedial fuscous line and marginal band.

Hab. Poona; Canara; Ceylon; Sylhet; Karen Hills. *Exp.* 36 millim.

SECT. II. Antennæ of male fasciculated.

A. (Oromena). *Male with the apex of fore wing not truncate.*

2440. **Polydesma relinquenda**, *Wlk. Cat.* xv, p. 1802; *C. & S.* no. 2436.

♀. Dark fuscous reddish, suffused with grey. Fore wing with indistinct pale waved subbasal, antemedial, and postmedial lines; traces of small orbicular and reniform spots; a submarginal series of whitish lunules. Hind wing pale; the outer area darker, with marginal series of white specks.

Hab. Sikhim; Mergui. *Exp.* 50 millim.

2441. **Polydesma commutanda**, *Warr. A. M. N. H.* (6) vii, 1891, p. 426.

Oromena reliquenda, *Moore, Lep. Atk.* p. 160 (*nec* relinquenda, *Wlk.*).

♂. Head, thorax, and abdomen pale red-brown. Fore wing

golden-olive suffused with black, with a large white patch on the basal area and white postmedial band; indistinct subbasal and antemedial waved black lines, interrupted by the white patch; the reniform ill-defined and blackish; a series of blackish lunules, irrorated with white beyond the postmedial white band; a submarginal series of black and white lunules. Hind wing orange-yellow; a sinuous postmedial black line; the outer area black, with a white streak at anal angle.

Hab. Sikhim. *Exp.* 56 millim.

B. (Coptoplax). *Male with the apex of fore wing truncate, the truncate margin being bent over on the upper surface of the wing; the veins towards apex distorted.*

2442. **Polydesma lindsayi,** *Hmpsn. Ill. Het.* viii, p. 127, pl. 154, fig. 17.

♂. Differs from *commutanda* in being much darker; the abdomen dark brown. Fore wing without white markings; the area between the subbasal and antemedial lines blackish, irrorated with white.

Hab. Nilgiris. *Exp.* 54 millim.

Genus **HOMOPTERA.**

Homoptera, *Boisd. Icon. Règ. Anim.* p. 522 (1829).
Alamis, *Guen. Noct.* iii, p. 3 (1852).
Dugaria, *Wlk. Cat.* xiii, p. 1075 (1857).
Mœpa, *Wlk. Cat.* xxxiii, p. 915 (1865).

Type, *H. lunata*, Drury, from N. America.

Range. Nearctic, Neotropical, Ethiopian, Oriental, and Australian regions.

Palpi with the 2nd joint reaching vertex of head, the 3rd rather short; antennæ of male with short fasciculate cilia; metathorax with a slight tuft; abdomen with prominent dorsal tufts; tibiæ of male heavily clothed with hair; the mid tibiæ spined.

Larvæ with four pairs of abdominal prolegs, the first two pairs aborted or rudimentary.

Sect. I. (*Alamis*). Male with the greater part of the underside of fore and hind wings clothed with silky hair.

2443. **Homoptera umbrina,** *Guen. Noct.* iii, p. 4; *C. & S.* no. 2455.
Alamis albicincta, *Guen. Noct.* iii, p. 4.
Alamis hypophæa, *Guen. Noct.* iii, p. 4; *C. & S.* no. 2453.
Alamis continua, *Wlk. Cat.* xxxiii, p. 877; *Forsayeth, Trans. Ent. Soc.* 1884, p. 412, pl. 15, fig. 9 (larva); *C. & S.* no. 2451.
Homoptera detersa, *Wlk. Cat.* xxxiii, p. 888; *C. & S.* no. 2461.
Homoptera plumipes, *Wlk. Cat.* xxxiii, p. 888; *C. & S.* no. 2463.
Alamis yendola, *Swinh. Trans. Ent. Soc.* 1891, p. 150.

Dark red-brown. Fore wing with sinuous subbasal and antemedial black lines and numerous indistinct waved reddish lines on basal half of wing; a sinuous postmedial black line, excurved beyond cell and slightly angled at veins 4 and 6, with an irregular fuscous black band beyond it; an indistinct irregular fuscous submarginal

line. Hind wing with numerous fuscous waved lines and a sinuous postmedial black line.

The form *albicincta* has the area beyond the antemedial line of fore wing and the outer area prominently suffused with white; other specimens have the fore wing suffused with fuscous as far as the submarginal line.

Larva green, the dorsal area whitish; a yellow line dividing the eyes; a yellow lateral line with blue specks on it; the 1st pair of abdominal prolegs aborted, the 2nd pair rudimentary.

Hab. Throughout India. *Exp.*, ♂ 30–38, ♀ 38–48 millim.

SECT. II. (*Dugaria*). Male with no silky scales on underside of fore wing; hind wing with only the subcostal area so clothed, more especially towards apex.

2444. **Homoptera glaucinans**, *Guen. Noct.* iii, p. 6; *Hmpsn. Ill. Het.* ix, pl. 165, figs. 1, 7, 15; *C. & S.* no. 2452.
Alamis tigilla, *Guen. Noct.* iii, p. 6.
Alamis mendax, *Wlk. Cat.* xiii, p. 1047.
Homoptera infligens, *Wlk. Cat.* xiii, p. 1068; *C. & S.* no. 2454.
Homoptera solita, *Wlk. Cat.* xiii, p. 1068; *Forsayeth, Trans. Ent. Soc.* 1884, p. 411, pl. 14, fig. 9 (larva); *C. & S.* no. 2466.
Dugaria cilipes, *Wlk. Cat.* xiii, p. 1076.
Homoptera delineosa, *Wlk. Cat.* xv, p. 1798.
Homoptera disjuncta, *Wlk. Cat.* xxxiii, p. 885.
Homoptera antica, *Wlk. Cat.* xxxiii, p. 887; *C. & S.* no. 2458.
Hypogramma validula, *Wlk. Cat.* xxxiii, p. 893; *C. & S.* no. 2400.

Differs from *umbrina* in the fore wing having the sinuous lines on basal half very numerous, fine, and inwardly oblique; the postmedial line oblique below vein 4. Hind wing with the lines numerous, fine, and oblique; the postmedial line oblique and arising

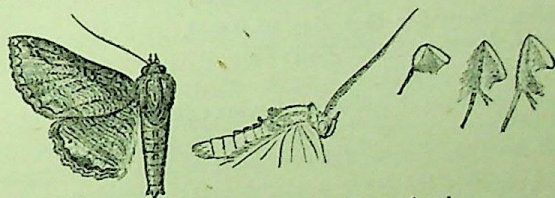



Fig. 263.—*Homoptera glaucinans*, ♂. 1/1.

from apex. Underside with the silky hair towards apex of hind wing in male fuscous.

Both wings may be much suffused and blotched with fuscous, and the postmedial line may be black and prominent or indistinct; in the form *disjuncta = antica* there is a diffused white medial **Y**-shaped band to fore wing, whilst in another form the medial area of fore wing is black.

Larva with the two anterior pairs of abdominal prolegs aborted; pale green, with broad yellow lateral stripe.

Hab. Congo; S. Africa; throughout India, Ceylon, and Burma; Java. *Exp.* 36–42 millim.

SECT. III. (*Homoptera*). Male with no silky scales on underside of either wing.

2445. **Homoptera albidens,** *Wlk. Cat.* xxxiii, p. 916; *C. & S.* no. 2423.

♂. Rufous-brown. Fore wing with indistinct subbasal line; slightly sinuous antemedial line; reniform with a few white scales round it; a sinuous postmedial line excurved beyond cell, and with a narrow white band beyond it; a marginal lunulate line. Hind wing with the basal and costal areas pale, the rest of the wing suffused with rufous, especially on each side of the nearly straight postmedial black line; a crenulate marginal black line.

Hab. Coimbatore. *Exp.* 30 millim.

2446. **Homoptera vinosa,** n. sp.

♀. Differs from *albidens* in being much darker and suffused with purple; abdomen dorsally suffused with black. Fore wing with the basal area darkest; indistinct double antemedial and medial waved black lines; a white speck in cell; the reniform greenish and elongate; a double postmedial line angled beyond the cell; a triangular dark mark with white edges on the costa before apex, which is suffused with white; two black submarginal spots; a large patch of white suffusion on inner half of outer area. Hind wing fuscous, with slight white marks on vein 2; a marginal series of white specks; the cilia fuscous; underside suffused with pink, and with a black cell-spot and crenulate medial and postmedial lines.

Hab. Nágas, 6000 feet (*Doherty*). *Exp.* 26 millim. Type in coll. Elwes.

Genus PANILLA.

Panilla, *Moore, Lep. Ceyl.* iii, p. 93 (1884).
Caduca, *Moore, Lep. Ceyl.* iii, p. 96.

Type, *P. dispila*, Wlk.

Range. Throughout India and Ceylon; Sumatra.

Palpi obliquely porrect, fringed with long hair below, and with long hair from their base, the 3rd joint minute; antennæ ciliated in male; metathorax with a slight tuft; abdomen with dorsal tufts at base; tibiæ fringed with long hair in male, and without spines; coxæ of fore legs with long tufts of hair. Fore wing short, the apex rounded.

2447. **Panilla dispila,** *Wlk. Cat.* xxxiii, p. 890; *Moore, Lep. Ceyl.* iii, pl. 156, fig. 12; *C. & S.* no. 2469.

Bright red-brown. Fore wing with indistinct curved waved antemedial, medial, and postmedial dark lines arising from black spots on the costa, the last with a black patch beyond it at centre; traces of a pale waved submarginal line; a marginal series of black specks, with a spot at centre of margin; some black specks on costa towards apex. Hind wing with antemedial and medial

sinuous dark lines; traces of a pale waved submarginal line; a marginal series of black specks.

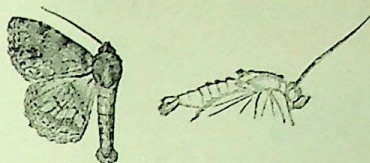



Fig. 264.—*Panilla dispila*, ♂. ½.

The form from the N.W. Himalayas is large, with a prominent black triangular patch on the costa of fore wing before apex.

Hab. N.W. Himalayas; Poona; Nilgiris; Ceylon. *Exp.* 26–34 millim.

2448. **Panilla albopunctata**, *Wlk. Cat.* xiii, p. 1068; *C. & S.* no. 2457.
Alamis meleagris, *Feld. Reis. Nov.* pl. 111, fig. 32; *C. & S.* no. 2456.

Head, thorax, and abdomen clothed with dark red-brown, grey, and fuscous scales. Fore wing dark red-brown suffused with grey, which covers the whole of the wing except the costal and outer areas, which are irrorated with grey; indistinct waved sub-basal, antemedial, and medial lines; orbicular small, dark, and elongate; reniform prominent, with some grey on it; a dentate postmedial line and indistinct submarginal line; a marginal series of dark specks. Hind wing red-brown; some grey at base; an indistinct medial line and dentate postmedial; the whole outer area except apex covered with white spots and short waved striæ; a series of black specks on margin.

Hab. "N. India;" Ceylon. *Exp.* 40 millim.

Genus MELIPOTIS.

Melipotis, *Hübn. Zutr.* i, p. 17 (1806–1818).
Anumeta, *Wlk. Cat.* xv, p. 1769 (1858).
Palpangula, *Staud. Stett. Ent. Zeit.* xl, p. 324 (1879).

Type, *M. jucunda*, Hübn., from N. America.

Range. Nearctic region; Europe; Central Asia; N. W. Himalayas; Sind.

Palpi with the 2nd joint obliquely upturned and reaching vertex of head, the 3rd long and porrect; antennæ with short fasciculated cilia in male. Thorax and abdomen smoothly scaled; mid and hind tibiæ with medial and terminal tufts of long spinous hairs. Fore wing with the apex somewhat quadrate.

SECT. I. (*Anumeta*). Fore, mid, and hind tibiæ with the spinous tufts immensely developed.

2449. **Melipotis atrosignata**, *Wlk. Cat.* xv, p. 1770; *C. & S.* no. 2190.

Head, thorax, and abdomen grey. Fore wing yellowish grey

suffused with fuscous; antemedial, postmedial, and submarginal waved lines with pale edges; a series of marginal specks. Hind wing white, with diffused ante- and postmedial fuscous band; the

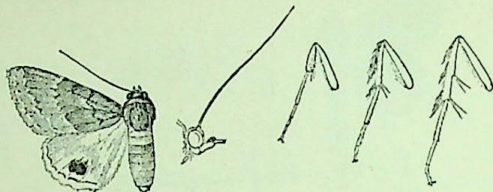



Fig. 265.—*Melipotis atrosignata*, ♂. ½.

apex fuscous; a large black spot near middle of outer margin; a dark marginal line.

Hab. Hyderabad, Sind. *Exp.* 34 millim.

SECT. II. (*Melipotis*). Mid and hind tibiæ with slight spinous tufts; fore tibiæ without the tufts.

2450. **Melipotis cashmirensis**, n. sp.

♂. Head and thorax brown, irrorated with grey; abdomen pale brown. Fore wing brown, thickly suffused with grey; a medial white band, bounded inwardly by a dark brown line and outwardly by a postmedial line much excurved beyond cell, especially beyond lower angle, to which it is sharply excurved; a dark line on discocellulars; a nearly straight submarginal indistinct pale line. Hind wing brown, with the interspaces of basal area whitish; a white spot on outer margin at vein 2; the cilia white.

Hab. Kashmir (*McArthur*). *Exp.* 38 millim. Type in coll. Leech.

SECT. III. Male with large tufts of hair on inner side of palpi on 2nd and 3rd joints; tibiæ with the tufts slight. Hind wing with a patch of differently formed scales in base of cell, and a tuft of hair from base of costal nervure on upperside.

2451. **Melipotis fulviceps**, n. sp.

Dark fuscous brown, with a bronze tinge; head and legs bright orange-yellow; the tufts on palpi of male black. Fore wing slightly irrorated with grey; some white specks on costa towards apex, and a series on outer margin. Hind wing paler.

Hab. Simla (*Harford*). *Exp.* 32 millim. Type in B. M.

Genus **GNAMPTOGYIA**, nov.

Type, *G. multilineata*, Hmpsn.

Range. N.W. Himalayas.

Palpi upturned, smoothly scaled, and reaching just above vertex of head; antennæ long and thick, with fasciculated cilia in male;

thorax and abdomen smoothly scaled; hind tibiæ much distorted and bent, the terminal pair of spurs minute. Fore wing with the apex acute.

2452. **Gnamptogyia multilineata**, n. sp.

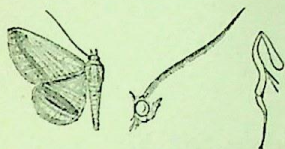



Fig. 266.
Gnamptogyia multilineata, ♂. ½.

♂. White, thickly irrorated with brown scales. Fore wing with numerous oblique lines from near apex to inner margin; the outer area fuscous, its inner edge rufous. Hind wing crossed by numerous oblique lines; the outer area fuscous, its inner edge rufous.

Hab. Simla (*Harford*). *Exp.* 24 millim. Type in B. M.

Genus **LYNCESTIS**.

Lyncestis, *Wlk. Cat.* xi, p. 632 (1857).
Jarasana, *Moore, Lep. Atk.* p. 132 (1882).

Type, *L. amphix*, Cram.

Range. Nearctic region; Jamaica; India.

Palpi upturned and reaching vertex of head, the 2nd joint roughly scaled; antennæ minutely ciliated in male; very slight tufts on metathorax and on proximal segments of abdomen. Fore wing somewhat narrow; the apex rounded; the cilia crenulate. Tibiæ without spines and moderately hairy.

2453. **Lyncestis amphix**, *Cram. Pap. Exot.* ii, pl. 134, C; *C. & S.* no. 2333.
Jarasana lativitta, *Moore, Lep. Atk.* p. 132; *C. & S.* no. 2338.

♂. Head, thorax, and abdomen grey; a black line on collar. Fore wing grey, with faint traces of numerous waved and dentate lines; some black specks at lower angle of cell and a series on

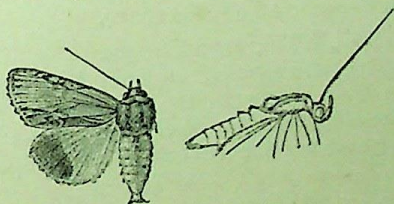



Fig. 267.—*Lyncestis amphix*, ♂. ½.

outer margin. Hind wing opalescent white, with a broad black marginal band from the apex to vein 2.

Hab. Benares; Karáchi; Poona; Nilgiris. *Exp.* 38 millim.

2454. **Lyncestis unilinea**, *Swinh. P. Z. S.* 1885, p. 452, pl. 27, fig. 7; *C. & S.* no. 2140.

♀. Differs from *amphix* in being browner grey. Fore wing

with a black fascia from the base below the cell to outer margin at vein 3; the marginal specks more prominent. Hind wing with the margin and veins near it tinged with fuscous instead of a marginal band.

Hab. Poona; Ahmedabad. *Exp.* 42 millim.

Genus **GNAMPTONYX**, nov.

Type, *G. vilis*, Wlk.

Range. Aden; N.W. India.

Palpi short and obliquely upturned, the 2nd joint roughly scaled, the 3rd minute. Antennæ fasciculated in male. Thorax and abdomen smooth. Fore tibia with a pair of long crooked terminal spines; mid tibia spined and clothed above with large recumbent scales. Fore wing somewhat quadrate at apex.

2455. **Gnamptonyx vilis**, *Wlk. Cat.* xxxiii, p. 889; *C. & S.* no. 2468.

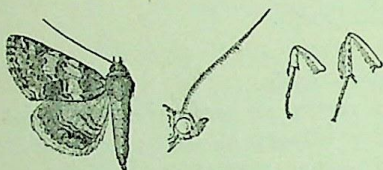



Fig. 268.—*Gnamptonyx vilis*, ♂. 1/1.

Pale ochreous brown. Fore wing more or less suffused with fuscous; slightly waved ante- and postmedial dark lines, the latter excurved beyond the cell; a pale medial band and patch beyond the cell often present; an irregularly waved ochreous submarginal line. Hind wing with postmedial dark line and waved ochreous submarginal line. Underside almost uniform whitish.

Hab. Aden; Punjab. *Exp.* 32–36 millim.

Genus **PSEUDOPHIA**.

Pseudophia, *Guen. Noct.* iii, p. 234 (1852).

Type, *P. illunaris*, Hübn., from Europe.

Range. Nearctic and Palæarctic regions; Aden; N.W. India.

Differs from *Gnamptonyx* in the palpi having the 3rd joint longer; the fore tibia without the crooked spines; the mid tibia without the large scales; the mid and hind tibiæ spined.

2456. **Pseudophia benenotata**, *Warr. P. Z. S.* 1888, p. 313; *C. & S.* no. 2440 A.

♂. Pale grey. Fore wing with indistinct subbasal and antemedial dark lines; the reniform brownish, with dark edges; an indistinct postmedial line, excurved beyond the cell; a pale waved submarginal line, with brown inner edge; a crenulate marginal line. Hind wing pale brownish fuscous, the cilia whitish.

Hab. Egypt; Rawal Pindi. *Exp.* 30 millim.

2457. **Pseudophia indecisa,** *Wlk. Cat.* xii, p. 829; *C. & S.* no. 1884.
Caradrina sabulosa, *Swinh. P. Z. S.* 1884, p. 516, pl. 47, fig. 6; *C. & S.* no. 2114.

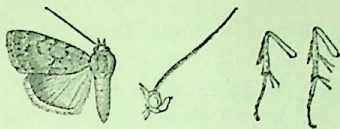



Fig. 269.—*Pseudophia indecisa*, ♂. ½.

Brownish ochreous. Fore wing with waved subbasal, antemedial, postmedial, and submarginal lines; the postmedial highly excurved beyond the cell, then irregularly recurved to its lower angle; a dark mark on discocellulars; a series of marginal white specks; the medial and outer areas often suffused with fuscous. Hind wing white, the apical area fuscous. Underside white, with the outer area of fore wing and apex of hind wing fuscous.

Hab. Aden; Murree; Campbellpur. *Exp.* 25–32 millim.

2458. **Pseudophia devia,** *Swinh. P. Z. S.* 1884, p. 520, pl. 48, fig. 3; *C. & S.* no. 2441.

♀. Brownish grey. Fore wing with very indistinct subbasal, ante- and postmedial waved lines; the orbicular and reniform indistinct; a very irregular submarginal pale line with some blackish marks on it; some marginal pale specks. Hind wing with broad black postmedial band and some fuscous on outer margin. Underside whitish, with submarginal fuscous band to each wing with waved outer edge.

Hab. Karáchi. *Exp.* 45 millim.

2459. **Pseudophia infrequens,** *Swinh. P. Z. S.* 1884, p. 517, pl. 47, fig. 11; *C. & S.* no. 1916.

♀. Sandy-brown. Fore wing with faint traces of the reniform; antemedial, postmedial, and submarginal lines. Hind wing browner, with the cilia pale. Underside pale, slightly darker towards outer margin.

Hab. Hyderabad, Sind; Karáchi. *Exp.* 30 millim.

Genus CATEPHIA.

Catephia, *Ochs. Eur. Schmett.* iv, p. 94 (1816).
Aedia, *Hübn. Verz.* p. 260 (1818).
Anophia, *Guen. Ann. Soc. Ent. Fr.* x, p. 81 (1841).
Zarima, *Moore, Lep. Atk.* p. 162 (1882).

Type, *C. alchemista*, Schiff, from Europe.

Range. Europe; S. African subregion and Oriental and Australian regions.

Palpi smooth and reaching just above vertex of head; thorax hairy; abdomen with dorsal tufts and ridges of scales on proximal segments; tibiæ hairy and without spines. Fore wing with the apex nearly rectangular.

SECT. I. (*Catephia*). Antennæ of male almost simple.

A. *Fore legs in male with thick tufts of scales from coxæ, and very long fringe of hair from femora and tibiæ.*

2460. **Catephia linteola**, *Guen. Noct.* iii, p. 44; *Moore, Lep. Ceyl.* iii, pl. 159, fig. 1; *C. & S.* no. 2347.

Head and thorax black and dark red-brown with a purplish gloss; abdomen black. Fore wing red-brown more or less suffused with black; a short subbasal line; waved antemedial, medial,

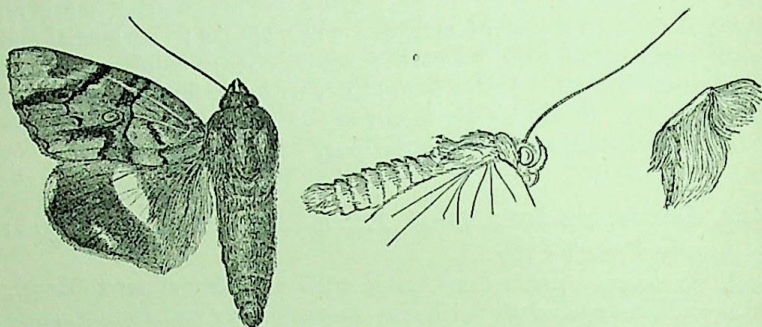



Fig. 270.—*Catephia linteola*, ♂. ½.

and postmedial lines, the last highly angled outwards beyond end of cell; a small black spot or ring-spot in cell and indistinct reniform spot with ring-spot below it; traces of an irregularly waved submarginal line; the apex irrorated with white. Hind wing black, with a broad pure white medial band not reaching inner margin; the apex white, and some white submarginal spots more or less developed towards anal angle.

Hab. S. Africa; Madagascar; throughout India, Ceylon, and Burma; Borneo; Australia; Marshall Islands. *Exp.* 56–66 millim.

B. *Fore leg of male without the tufts of scales and long fringes.*

2461. **Catephia flavescens**, *Butl. Ill. Het.* vii, p. 74, pl. 131, fig. 12.

Head and collar ochreous; thorax rufous suffused with black; abdomen blackish. Fore wing ochreous, with subbasal, antemedial, postmedial, and submarginal waved lines, the postmedial excurved beyond the cell; the orbicular and reniform large with dark outlines; dark patches on costa at centre and at apex; the inner area blackish, with some blue scales near outer angle. Hind wing yellowish, with the outer area black-brown, leaving the apex yellow.

Hab. Dharmsála; Sikhim. *Exp.* 38 millim.

2462. **Catephia acronyctoides**, *Guen. Noct.* iii, p. 47; *C. & S.* no. 2352.
Anophia olivescens, *Guen. Noct.* iii, p. 48, pl. 14, fig. 11; *C. & S.* no. 2355.
Anophia discistriga, *Wlk. Cat.* xiii, p. 1128.
Anophia epundoides, *Wlk. Cat.* xxxiii, p. 917; *C. & S.* no. 2354.

Fuscous; the thorax and fore wing suffused with olive or white. Fore wing with indistinct subbasal and waved antemedial lines; traces of orbicular, reniform, and claviform spots; a postmedial double waved line slightly excurved beyond cell; traces of an irregular submarginal line; a marginal series of black specks. Hind wing pure white; the inner margin suffused with fuscous; the outer half of wing black, with white patches at apex and anal angle. Underside of fore wing with the basal two thirds white, with spot at end of cell.

In *acronyctoides* the suffusion is white, the reniform and a patch above it more or less white; in *olivescens* the suffusion is olive; in *discistriga* from Africa and a Sikhim specimen the white area of the hind wing is reduced, and in this and the Australian form the white patches at apex and anal angle are often obsolete. In a form from Dharmsála the colour is blackish without olive or grey suffusion, the postmedial line of fore wing more angled beyond cell, and with no white patches at apex and anal angle of hind wing.

Hardly separable from the European *leucomelas*, Linn.

Hab. W. and S. Africa; throughout India, Ceylon, and Burma; Andamans; Java; Australia. *Exp.* 40 millim.

2463. **Catephia dulcistriga**, *Wlk. Cat.* xv, p. 1811.
Anophia longinquua, *Swinh. Trans. Ent. Soc.* 1890, p. 233.

Differs from *acronyctoides* in the fore wing being shorter and broader, the thorax and fore wing variegated with pale brown; the reniform spot whitish. Hind wing with the white confined to a round patch at end of cell; the cilia white at apex and anal angle.

Hab. S. Africa; Sikhim; Rangoon. *Exp.* 25–30 millim.

2464. **Catephia diphtheroides**, *Moore, Lep. Ceyl.* iii, p. 118, pl. 159, fig. 6; *C. & S.* no. 2353.

♀. Head and thorax silvery grey variegated with fuscous and black; the abdomen fuscous. Fore wing silvery grey; subbasal, antemedial, and postmedial waved black lines and dentate submarginal line; indistinct antemedial, medial, and postmedial subsidiary lines; the orbicular, reniform, and claviform grey spots with black outlines; a marginal series of black specks. Hind wing with the base white; the inner area and outer half fuscous, with white patches at apex and anal angle.

Hab. Ceylon. *Exp.* 40 millim.

C. *Male with lateral tufts of hair from near base of abdomen and immensely developed anal tufts; legs fringed with long hair, but without tufts; antennæ moderately ciliated; inner margin of hind wing with large tufts of hair.*

2465. **Catephia thricophora**, n. sp.

♂. Palpi purplish; vertex of head, collar, and patagia dark green; thorax and abdomen ochreous brown, the latter with the

lateral tufts pale and the anal tufts ochreous and black. Fore wing fuscous; the basal area suffused with vinous purple, the rest with dark green; indistinct waved black ante- and postmedial lines, the latter excurved beyond cell; some ochreous streaks on the veins at end of cell; a dark brown diffused subapical spot and small ochreous streak above centre of margin. Hind wing black with the subbasal area pure white, the cilia greenish.

Hab. Mergui (*Doherty*). *Exp.* 42 millim. Type in coll. Druce.

SECT. II. Antennæ of male fasciculated.

2466. **Catephia perdicipennis,** *Moore, Lep. Atk.* p. 162, pl. 5, fig. 18; *C. & S.* no. 2356.

♂. Head and thorax pale purplish fuscous variegated with olive-green; abdomen fuscous, with the dorsal tufts olive. Fore wing pale purplish fuscous; the costa olive; a short subbasal line with rufous spot inside it; a waved antemedial double line filled in with olive, and with a black striga inside it at inner margin; the orbicular, reniform, and claviform pinkish with dark and olive outlines; a double postmedial black line filled in with olive, very highly excurved beyond cell, and with a black streak from it to centre of outer margin; some slight subapical dentate marks. Hind wing with the base white; the outer half fuscous; underside with cell-spot and crenulate postmedial line.

Hab. Sikhim. *Exp.* 32 millim.

SECT. III. Antennæ of male bipectinate, the branches very short.

2467. **Catephia inquieta,** *Wlk. Cat.* x, p. 340.
Anophia mosara, *Swinh. P. Z. S.* 1889, p. 413.

Fuscous black slightly tinged with red-brown. Fore wing with the subbasal, antemedial, postmedial, and submarginal lines indistinct; the orbicular, reniform, and claviform indistinct, the reniform large and pale in parts; a pale fascia on vein 2 from the cell to postmedial line. Hind wing white; the outer half fuscous, or with slight suffusion on outer area and dark marginal line.

Hab. S. Africa; Sind; Alibág, near Bombay; Ceylon. *Exp.* 32 millim.

SECT. IV. (*Zarima*). Antennæ of male bipectinate, the branches long.

2468. **Catephia dentifera,** *Moore, Lep. Atk.* p. 162, pl. 5, fig. 19; *C. & S.* no. 2357.

♂. Head olive and rufous; thorax rufous, with olive patch on patagia; abdomen fuscous, the base and anal tuft rufous. Fore wing dark red-brown; an olive fascia on inner area; the base variegated with olive; the subbasal, antemedial, and curved post

medial lines indistinct, the last with some olive beyond it; an indistinct pale submarginal line; a marginal series of black specks; cilia olive with brown tips. Hind wing with the base white; the outer area fuscous brown; the cilia pale with a dark line through them; underside with cell-spot and crenulate postmedial line.

Hab. Sikhim. *Exp.* 36 millim.

Genus MOSARA.

Mosara, *Wlk. Cat.* v, p. 1032 (1855).

Type, *M. apicalis*, Wlk.

Range. Western India, Ceylon, and Burma; Borneo.

Palpi upturned, reaching above vertex of head; antennæ bipectinated; thorax hairy; abdomen with slight dorsal tufts; the male with large lateral and anal tufts; tibiæ without spines and strongly tufted. Fore wing short and broad; the apex rounded; the inner margin lobed near base, and with a slight tooth of scales at outer angle. Hind wing of male with a ridge and fold on underside running from centre of costa to lower angle of cell and thence to centre of outer margin.

2469. **Mosara apicalis**, *Wlk. Cat.* v, p. 1032; *Moore, Lep. Ceyl.* iii, pl. 159, figs. 3, 3 *a*; *C. & S.* no. 2351.
Anophia lateralis, *Wlk. Cat.* xxxiii, p. 917.

Head and thorax dark red-brown; abdomen pale, with the lateral and anal tufts fulvous. Fore wing dark red-brown; a

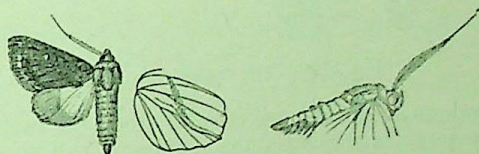



Fig. 271.—*Mosara apicalis*, ♂. 1/1.

chocolate spot at base; an indistinct curved antemedial line; the reniform indistinct, with a white speck on it; a curved submarginal pale line, with an indistinct crenulate line inside it; some subapical dark spots, and one at centre of outer margin. Hind wing with the basal half pale, the outer fuscous.

Hab. Poona; Nilgiris; Ceylon; Moulmein; Rangoon; Borneo. *Exp.*, ♂ 28, ♀ 32 millim.

Genus ARCTE.

Arcte, *Koll. Hügel's Kaschmir*, iv, p. 477 (1844).
Cocytodes, *Guen. Noct.* iii, p. 41 (1852).

Type, *A. polygrapha*, Koll.

Range. W. Indies; Africa; the Oriental region to the New Hebrides and Fiji.

Palpi upturned and reaching vertex of head, the 3rd joint short; antennæ quite simple; thorax and abdomen clothed with long hair, the latter in male with a strongly ridged chitinous rasp on centre of dorsum of penultimate segment, probably played on by the strong chitinous spurs of the hind legs; tibiæ fringed with long hair.

SECT. I. Mid and hind tibiæ spined; hind wing of male with the inner margin fringed with long hair.

2470. **Arcte cærulea**, *Guen. Noct.* iii, p. 41, pl. 13, fig. 10; *C. & S.* no. 2342; *Hmpsn. Ill. Het.* ix, pl. 176, fig. 5 (larva).

Head black; thorax vinous red-brown; pectus white; abdomen bluish fuscous, with a white tuft in male below the claspers.

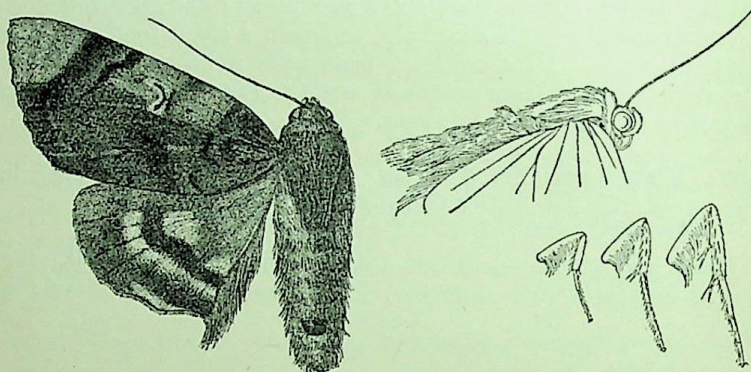



Fig. 272.—*Arcte cærulea*, ♂. ½.

Fore wing brown suffused with black, except the costal area as far as the postmedial line and the apical area, and irrorated with a few bluish-white scales; a short almost basal line; two black subbasal patches; an oblique waved antemedial line; a black spot in cell and two lunules at end of it; a lunulate postmedial line angled beyond lower end of cell; traces of a pale waved submarginal line. Hind wing black, with a bright blue patch on disk; a maculate postmedial band and patch near anal angle.

Larva black; the somites with transverse dorsal white bars each enclosing a black line; stigmata ochreous, black-ringed, and with some red round them, situated on white patches, from near the top of each of which springs a white hair; an interspiracular disconnected white line; a broader spiracular line with a black spot, from which springs a white hair below each spiracle; a broad ventral white band; the 11th somite humped and black above; the extremity orange above spotted with black; head and somites with sparse long white hairs.

Hab. Japan; throughout India, Ceylon, and Burma; Java; New Hebrides; New Caledonia; Fiji. *Exp.* 84 millim.

SECT. II. Mid and hind tibiæ not spined; male with the inner margin of hind wing not fringed with long hair.

2471. **Arcte polygrapha**, *Koll. Hügel's Kaschmir*, iv, p. 478.

Differs from *cærulea* in the thorax being clothed with red-brown pale-tipped hairs; abdomen greyish, with black rings. Fore wing with patches of white scales on the subbasal patches and in cell; the antemedial line curved; no black spot in cell, the postmedial line double and exceedingly sinuous; a series of black submarginal patches; a marginal black line.

Hab. Simla; Kashmir; Sikhim. *Exp.* 92 millim.

2472. **Arcte taprobana**, *Moore, Lep. Ceyl.* iii, p. 113, pl. 160, fig. 1; *C. & S.* no. 2346.
Arcte nigrescens, *Butl. Ill. Het.* vi, p. 38, pl. 110, fig. 8; *C. & S.* no. 2345.

Differs from *cærulea* in the antemedial line of fore wing being waved; the postmedial line regularly curved; a marginal series of black and fulvous specks. Hind wing with an obscure double postmedial series of small blue spots developed only towards inner margin, and a more developed submarginal series replacing the bright blue markings.

In the form *taprobana* from Ceylon, the ground-colour of fore wing is yellow-brown slightly suffused with fuscous; in *nigrescens* from Sikhim it is wholly dark except the apical area.

Hab. Sikhim; Ceylon. *Exp.* 80–84 millim.

2473. **Arcte modesta**, *Van der Hoev. Tijd. Nat. Gesch.* vii, p. 282, pl. 7, fig. 8; *C. & S.* no. 2344.
Arcte senica, *Feld. Reis. Nov.* pl. 113, fig. 2.
Cocytodes immodesta, *Guen. Noct.* iii, p. 42.
Cocytodes granulata, *Guen. Noct.* iii, p. 42; *C. & S.* no. 2343.

Differs from *taprobana* in the basal black patch of fore wing being larger, the antemedial line regularly curved; the postmedial line angled beyond the cell. Hind wing with single postmedial series of blue spots and indistinct marginal series. Underside with the margin of both wings suffused with pale blue; hind wing with two medial series of pale blue blotches.

Hab. Sikhim; Assam; Java. *Exp.* 86 millim.

Genus CYCLODES.

Cyclodes, *Guen. Noct.* iii, p. 26 (1852).
Beregra, *Wlk. Cat.* xiv, p. 1315 (1858).

Type, *C. omma*, Van der Hoev.

Range. Sikhim; Assam; S. India; Ceylon: Java.

Palpi smoothly scaled, the 2nd joint reaching vertex of head, the 3rd minute; antennæ quite simple; thorax hairy; abdomen with strong ridges of coarse hair; tibiæ slightly hairy and without

spines. Fore wing with the apex nearly rectangular; the outer margin obliquely rounded. Hind wing with vein 5 from above angle of cell.

2474. **Cyclodes omma,** *Van der Hoev. Tijd. Nat. Gesch.* vii, p. 281, pl. 7, figs. *a, b*; *Moore, Lep. Ceyl.* iii, pl. 160, fig. 7; *C. & S.* no. 2573.
Beregra replenens, *Wlk. Cat.* xiv, p. 1315.

Head, thorax, and abdomen clothed with pale red-brown and grey hair. Fore wing pale golden brown with green reflexions; the outer area whitish; the apical area irrorated with purplish;

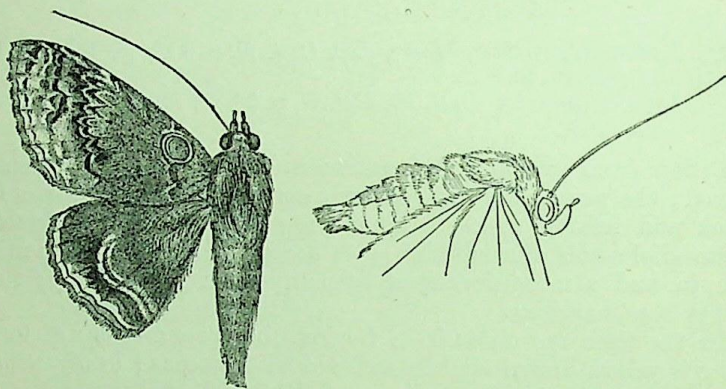



Fig. 273.—*Cyclodes omma*, ♂. ½.

a metallic-blue ring-spot below costa embraced by the double sinuous antemedial line; indistinct sinuous medial, postmedial, and submarginal lines, the first angled at lower end of cell, the second dentate from costa to vein 3; an almost marginal series of dark striæ. Hind wing greyish fuscous; a curved postmedial white band with a dark line on it; some blue marks with a whitish band beyond them towards anal angle; the apical area blackish; a marginal whitish band defined by brown lines. Underside with an indistinct lunulate postmedial pale line and traces of submarginal line, blackish towards costa of each wing.

Hab. Sikhim; Assam; Travancore; Ceylon; Java. *Exp.* 60–72 millim.

Genus MITHILA.

Mithila, *Moore, Lep. Atk.* p. 156 (1882).

Type, *M. lichenosa*, Moore.

Range. Sikhim.

Palpi upturned, the 2nd joint reaching vertex of head and thickly scaled, the 3rd of moderate length; antennæ ciliated in male; thorax with a slight tuft behind collar and paired tufts on metathorax; abdomen with dorsal tufts on first three segments,

that on third largest; legs very heavily clothed with hair. Fore wing with the apex rounded. Hind wing with vein 5 from below centre of discocellulars.

2475. **Mithila lichenosa**, *Moore, Lep. Atk.* p. 157; *C. & S.* no. 2262.

Olive-green, irrorated with grey scales. Fore wing with indistinct double waved subbasal, antemedial, and postmedial black

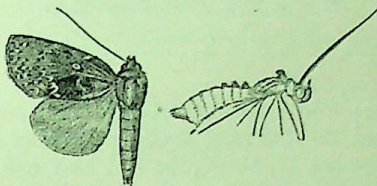



Fig. 274.—*Mithila lichenosa*, ♂. 1/1.

lines, and single medial and submarginal lines; a grey spot in end of cell and patch at apex; a marginal series of black specks. Hind wing dark brown, the cilia red-brown; underside with cell-spot and oblique postmedial line.

Hab. Sikhim. *Exp.* 42 millim.

Genus COARICA.

Coarica, *Moore, Lep. Atk.* p. 153 (1882).

Type, *C. fasciata*, Moore.

Range. Himalayas.

Palpi upturned, slender, and smoothly scaled, the 2nd joint reaching just above vertex of head, the 3rd of moderate length; a sharp frontal tuft; antennæ simple; thorax with a very high sharp crest; abdomen with large dorsal tufts of spatulate scales on the 2nd and 3rd segments. Fore wing with the apex slightly acute. Hind wing with vein 5 from below centre of discocellulars.

2476. **Coarica fasciata**, *Moore, Lep. Atk.* p. 153, pl. 5, fig. 1; *C. & S.* no. 2247.

♀. Head grey and brown; thorax and abdomen pale red-brown;

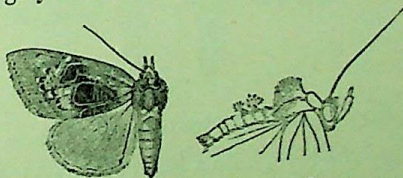



Fig. 275.—*Coarica fasciata*, ♀. 1/1.

the collar outlined with grey. Fore wing pale red-brown, with oblique antemedial black line from median nervure to inner

margin; a white speck in cell; a postmedial broad chocolate band, ill-defined on inner side, outwardly edged by a fine white line excurved beyond cell, and sending long teeth inwards on median nervure and vein 1; a broken submarginal sinuous black line. Hind wing pale fuscous, with slight black marks near anal angle.

Hab. Murree; Sikhim. *Exp.* 40 millim.

Genus SPHINGOMORPHA.

Sphingomorpha, *Guen. Noct.* iii, p. 220 (1852).

Type, *S. chlorea*, Cram.

Range. Africa; Aden; throughout the Indian region; Java.

Palpi upturned, the 2nd joint reaching vertex of head, smoothly scaled and somewhat thickened, the 3rd long and very slender; antennæ of male with slight fasciculated cilia on underside; thorax and abdomen smoothly scaled; the tibiæ fringed with hair; the fore tibiæ clothed with tufts of immensely long hair in male. Fore wing long and narrow; the costa arched before the apex; the outer margin obliquely rounded, with the cilia crenulate. Hind wing with the outer margin excised from vein 2 to anal angle.

2477. **Sphingomorpha chlorea**, *Cram. Pap. Exot.* ii, pl. 104, fig. C; *C. & S.* no. 2593.
Sphingomorpha sipyla, *Guen. Noct.* iii, p. 222, pl. 21, fig. 4.
Sphingomorpha monteironis, *Butl. A. M. N. H.* (4) xvi, p. 406.

Head ochreous white, the basal joint of palpi dark brown; thorax dark brown above, with a broad ochreous-white stripe on vertex;

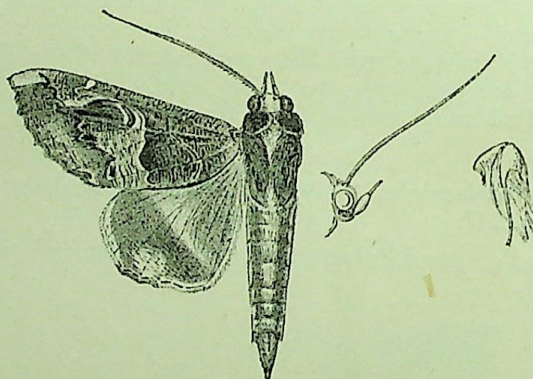



Fig. 276.—*Sphingomorpha chlorea*, ♂. 1/1.

abdomen dark brown above, with a series of dorsal ochreous-white spots. Fore wing red-brown with dark striæ; a pale patch at base of inner margin; an indistinct antemedial angulate line, an irregularly waved medial line with pale outer edge, and sometimes tinged with purple and rufous; some vinous patches beyond it;

the reniform a narrow lunule with a vinous dash beyond it; a crenulate postmedial line with three medial black lunules on it and one towards inner margin, and joined by a crenulate line from near apex; a marginal series of black specks. Hind wing fuscous brown, the base and a diffused medial irregular band pale; an ochreous patch with black striæ on it at centre of outer margin; the cilia pale. Underside pale, with fuscous submarginal band towards inner margin of each wing.

Hab. Africa; Aden; throughout India, Ceylon, and Burma. *Exp.* 60–84 millim.

Genus **LACERA.**

Lacera, *Guen. Noct.* iii, p. 336 (1852).

Type, *L. alope*, Cram.

Range. Neotropical, Ethiopian, and Oriental regions; Japan.

Palpi with the 2nd joint reaching vertex of head, the 3rd short; antennæ of male minutely ciliated; thorax and abdomen clothed with coarse hair; tibiæ very heavily tufted with hair. Fore wing with the apex arched and somewhat acute; the outer margin angled at centre; the cilia crenulate. Hind wing with the cilia crenulate; the margin produced to slight points at veins 4 and 6.

Larvæ with four pairs of abdominal prolegs, the first two pairs aborted.

2478. **Lacera alope**, *Cram. Pap. Exot.* iii, pl. 286, E, F; *Moore, Lep. Ceyl.* iii, pl. 173, figs. 1, 1 *a* (larva); *C. & S.* no. 2756.
Lacera capella, *Guen. Noct.* iii, p. 337.
Lacera procellosa, *Butl. A. M. N. H.* (5) iv, p. 368.

Dark reddish brown slightly irrorated with grey. Fore wing with traces of subbasal line; a curved slightly dentate antemedial black

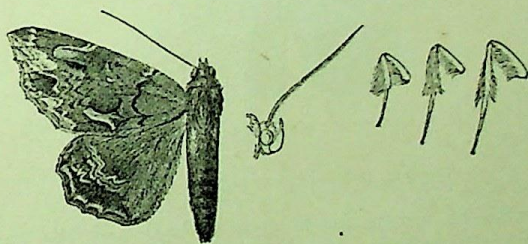



Fig. 277.—*Lacera alope*, ♂. 1/1.

line; an obscure reniform spot with an indistinct figure-of-8-shaped mark below it; a very irregularly dentate postmedial line excurved beyond the cell, a pale mark with black streaks on the veins in the sinus and a pale mark on it above inner margin; the outer area variegated with pale brown and fuscous. Hind wing with indistinct waved postmedial line; a marginal dark line with some blue-grey specks on it. Underside with the outer area of fore

wing variegated with rufous and purplish; some white on the postmedial line; the outer margin suffused with white except at apex; hind wing variegated with reds and purples; a brown-speckled yellow patch at apex.

Larva green, with dark dorsal striæ; the hinder part of somites 4–11 with dark specks and a sublateral series of similar specks; the legs and two dorsal prominences on 11th segment dark. Food-plants, *Pisonia* and *Canthium*.

Hab. S. Africa; Madagascar; Japan; China; throughout India, Ceylon, and Burma; Andamans. *Exp.* 48–64 millim.

Genus BRANA.

Brana, *Wlk. Cat.* xiii, p. 1099 (1857).

Type *B. calopasa*, Wlk.

Range. Ceylon; New Guinea.

Palpi with the 2nd joint not reaching vertex of head, the 3rd naked and porrect: antennæ almost simple; thorax and abdomen smoothly scaled; tibiæ without spines and moderately hairy. Fore wing with the apex somewhat rounded. Hind wing rather narrow; vein 5 from above lower angle of cell.

2479. **Brana calopasa**, *Wlk. Cat.* xiii, p. 1100; *Moore, Lep. Ceyl.* iii, pl. 148, fig. 6; *C. & S.* no. 2385.

Head black and white: thorax grey, the scales tipped with white; collar with some black at base and behind it; abdomen

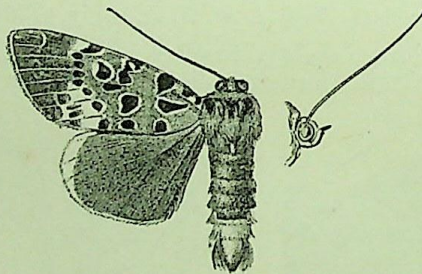



Fig. 278.—*Brana calopasa*, ♂. 1/1.

black, with an orange dorsal spot at base and the extremity orange; pectus orange; legs black and white. Fore wing with the basal half grey, the scales tipped with white; two black spots on a white patch at base of costa; an antemedial series of three white or yellow-ringed black spots; five medial spots, one being displaced outwards below the white-edged black reniform; a postmedial maculate band with some white beyond it; the outer area bluish black; the veins white; an indistinct submarginal white line. Hind wing blue-black; the apex and cilia white.

Hab. Ceylon; New Guinea. *Exp.* 58–60 millim.

Genus **CHRYSOPERA**, nov.

Type, *C. combinans*, Wlk.

Range. Throughout India, Ceylon, and Burma.

Palpi upturned and smoothly scaled, the 2nd joint reaching vertex of head, the 3rd long and slightly curved; antennæ serrate and fasciculated in male; thorax and abdomen smoothly scaled; tibiæ without spines, and not clothed with long hair. Fore wing with the apex somewhat rounded.

2480. **Chrysopera combinans**, *Wlk. Cat.* xiv, p. 1399; *Moore, Lep. Ceyl.* iii, pl. 169, fig. 3; *C. & S.* no. 2623.

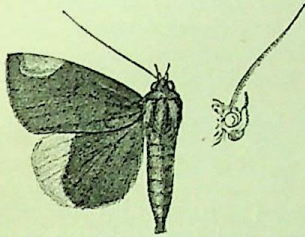



Fig. 279.
Chrysopera combinans, ♂. ½.

Very dark red-brown. Fore wing with a slight purplish gloss; indistinct antemedial, medial, and postmedial diffused lines; a pale apical semicircular patch with a piece cut out of its outer edge. Hind wing with a large bright yellow apical patch.

Hab. N.W. Himalayas; peninsular India, Ceylon, and Burma. *Exp.* 44 millim.

Genus **OPHIUSA.**

Ascalapha, *Hübn. Tentamen*, p. 2 (1806), præocc.
Thyas, *Hübn. Samml. Exot. Schmett.* ii. (? 1806).
Ophiusa, *Ochs. Eur. Schmett.* iv, p. 93 (1816).
Achæa, *Hübn. Verz.* p. 269 (1818).
Dysgonia, *Hübn. Verz.* p. 269.
Ophiodes, *Guen. Ann. Soc. Ent. Fr.* p. 77 (1841), præocc.
Ophisma, *Guen. Noct.* iii, p. 236 (1852).
Naxia, *Guen. Noct.* iii, p. 254.
Artena, *Wlk. Cat.* xiv, p. 1388 (1858).
Pasipeda, *Moore, Lep. Atk.* p. 171 (1882).
Minucia, *Moore, Lep. Ceyl.* iii, p. 159 (1884).
Macaldenia, *Moore, Lep. Ceyl.* iii, p. 162.
Caranilla, *Moore, Lep. Ceyl.* iii, p. 169.
Pindara, *Moore, Lep. Ceyl.* iii, p. 169.

Type, *O. algira*, Gmel.

Range. Palæarctic, Neotropical, Ethiopian, Oriental, and Australasian regions.

Palpi upturned and smoothly scaled, the 2nd joint reaching vertex of head, the 3rd variable in length and longer in the female than the male; thorax and abdomen smoothly scaled; mid tibiæ spined, and sometimes also the hind tibiæ; the tibiæ fringed with long hair in male. Fore wing with the apex somewhat acute; the outer margin nearly straight. Hind wing with the outer margin slightly angled at vein 2.

Larvæ with four pairs of abdominal prolegs, the first pair or first two pairs rudimentary.

Sect. I. Males without large tufts on the legs.

A. *Hind wing not orange or crimson.*

2481. **Ophiusa gravata,** *Guen. Noct.* iii, p. 237; *C. & S.* no. 2616.

Pale reddish brown. Fore wing with an indistinct straight erect medial pale line with dark inner edge; a slightly curved dark postmedial line and very obscure submarginal line; the cilia white at tips. Hind wing brownish ochreous, with a submarginal fuscous black band very wide near apex. Underside of fore wing with submarginal fuscous patch.

Hab. Sikhim; Sylhet; Burma; Ceylon; Australia. *Exp.* 60 millim.

2482. **Ophiusa mezentia,** *Cram. Pap. Exot.* iv, pl. 323, F; *C. & S.* no. 2625.
Achæa reversa, *Wlk. Cat.* xiv, p. 1399; *Moore, Lep. Ceyl.* iii, pl. 169, figs. 2, 2 *a* (larva); *C. & S.* no. 2627.
Sypna lugens, *Wlk. Cat.* xxxiii, p. 938.

Dark brown; head and thorax irrorated with grey; the abdomen blackish. Fore wing uniformly coloured and irrorated with grey in the form *reversa*; in *mezentia* with indistinct subbasal, antemedial, medial, double postmedial, and submarginal waved lines slightly outlined with grey or ochreous; a broad medial grey or ochreous band with the reniform spot on it; an ill-defined semicircular apical grey or ochreous patch. Hind wing black, slightly shot with blue and with a large apical white patch. Underside of fore wing with a broad postmedial white band not reaching the costa.

Larva. Olive-grey with numerous longitudinal lines; a paler lateral band; underside pinkish; the anal somite with two dorsal yellow tubercles; head yellowish with black lines. Food-plant, *Canthium.*

Hab. Madras; Ceylon. *Exp.* 58–64 millim.

2483. **Ophiusa melicerte,** *Drury, Ill. Exot. Ins.* i, p. 46, pl. 23, fig. 1; *Moore, Lep. Ceyl.* iii, pl. 168, figs. 2, 2 *a*, *b* (larva); *C. & S.* no. 2624.
Noctua tigrina, *Fabr. Spec. Ins.* p. 218.
Achæa catella, *Guen. Noct.* iii, p. 247.
Catocala traversii, *Fereday, Trans. N. Z. Inst.* ix, p. 457, pl. 17.

Pale reddish brown. Fore wing with the markings usually prominent, but sometimes almost obsolete; a short subbasal waved line; obliquely waved antemedial and excised postmedial lines, often with black suffusion inside them; a speck at end of cell; a diffused rufous band beyond the postmedial line. Hind wing black, with medial white band; three large white spots on outer margin; the cilia whitish. Underside suffused with grey; fore wing with an oblique white postmedial band not reaching the costa; two crenulate medial lines on each wing.

Larva bluish grey speckled with blue-black; lateral and sub-lateral yellowish bands with intervening blue-grey line; a dorsal black stripe bordered by reddish-white spots between 4th and 5th somites; a pair of dorsal red tubercles on anal somite; spiracles and fore legs red; the head black-striped.

Hab. Ethiopian, Oriental, and Australasian regions. *Exp.* 60–70 millim.

2484. **Ophiusa serva,** *Fabr. Syst. Ent.* p. 593; *Moore, Lep. Ceyl.* iii, pl. 169, figs. 4, 4 *a*, *b*; *C. & S.* no. 2628.
Noctua vulpina, *Fabr. Ent. Syst.* iii, 2, p. 39.
Noctua mercatoria, *Fabr. Ent. Syst.* iii, p. 62.
Achæa ino, *Hübn. Verz.* p. 269.
Achæa fasciculipes, *Wlk. Cat.* xiv, p. 1400.
Achæa nubifera, *Moore, P. Z. S.* 1877, p. 609, pl. 59, fig. 9; *C. & S.* no. 2626.

Differs from *melicerte* in being usually more uniform pale brick-red, with the markings of the fore wing indistinct; the antemedial, medial, and postmedial lines are waved and often double. Hind wing with the medial band less prominent; the marginal spots smaller, that at anal angle obsolescent.

The form *fasciculipes* is large and dark.

Hab. Peninsular India; Ceylon; Burma; Borneo; Java; Celebes; New Hebrides; Australia. *Exp.* 50–76 millim.

2485. **Ophiusa illibata,** *Fabr. Syst. Ent.* p. 592; *C. & S.* no. 2622.
Hemeroblemma peropaca, *Hübn. Zutr.* iii, p. 33, figs. 541, 542.
Ophisma lætabilis, *Guen. Noct.* iii, p. 241.
Ophisma contenta, *Wlk. Cat.* xiv, p. 1381; *C. & S.* no. 2614.

Pale rufous. Fore wing with short subbasal and oblique antemedial dark lines on pale reddish bands; the reniform large with a dark line in it; three indistinct waved postmedial lines on pale reddish suffusion and one submarginal line; a large semicircular patch with white edges at apex. Abdomen and hind wing fuscous brown, the latter with indistinct pale medial line; the margin grey except at apex.

Hab. China; throughout India, Ceylon, and Burma. *Exp.* 72 millim.

2486. **Ophiusa circumsignata,** *Guen. Noct.* iii, p. 255; *C. & S.* no. 2634.

Pale ochreous brown. Fore wing with waved subbasal line; an antemedial line angled in the cell; traces of some whitish medial suffusion; a dark speck at end of cell; two curved and waved postmedial lines; an apical brown patch with ochreous edges, three specks on the costa and some whitish suffusion on it; the margin whitish with a series of marginal black specks. Hind wing with indistinct curved medial line and black spot at anal angle; the margin whitish with a series of black specks.

Hab. Sylhet. *Exp.* 50 millim.

2487. **Ophiusa palumba,** *Guen. Noct.* iii, p. 211; *Moore, Lep. Ceyl.* iii, pl. 168, figs. 1, 1 *a*, *b* (larva); *C. & S.* no. 2641.
Remigia colligens, *Wlk. Cat.* xxxiii, p. 1019.

Brownish grey. Fore wing slightly suffused with purple and irrorated with black; indistinct waved subbasal and antemedial lines; a small fuscous reniform spot, often obsolete; the postmedial line angled below costa, then indistinct and crenulate, with a series of black specks on the nervules; a slightly sinuous indistinct or prominent brown submarginal line; an almost marginal series of minute specks; some grey on cilia and margin. Hind wing with indistinct antemedial line; some fuscous postmedial suffusion and a series of small white lunules with ferruginous suffusion beyond them towards inner margin; some grey on margin and cilia and fuscous marks towards anal angle.

Larva with the 1st pair of abdominal prolegs aborted and two dorsal humps on anal somite; brownish ochreous above, olive beneath; some dorsal and lateral black-speckled streaks; a sublateral whitish line with some pinkish spots above it.

Hab. Throughout India, Ceylon, and Burma; Singapore; Java. *Exp.* 38–52 millim.

2488. **Ophiusa rigidistria,** *Guen. Noct.* iii, p. 240; *C. & S.* no. 2619.
Naxia calefaciens, *Wlk. Cat.* xiv, p. 1405; *Moore, Lep. Ceyl.* iii, pl. 168, fig. 3; *C. & S.* no. 2633.

Bronze-brown. Fore wing with a white speck in the cell; an erect straight medial whitish band with a dark line on its outer edge; an indistinct dark waved submarginal line; a marginal series of black specks. Abdomen and hind wing dark fuscous; the latter with traces of medial and submarginal pale lines; a marginal series of black specks. Underside with two waved postmedial lines to each wing.

Hab. Sylhet; Rangoon; Ceylon. *Exp.* 56 millim.

2489. **Ophiusa certior,** *Wlk. Cat.* xiv, p. 1381; *C. & S.* no. 2615.

Differs from *rigidistria* in the antemedial line of the fore wing being more waved and oblique; no white speck in the cell or medial whitish band; a small reniform with dark outline; the straight line postmedial, and the dentate line beyond it arising from the apex. Hind wing with the medial whitish band more prominent; outer margin and cilia of both wings brown. Underside uniform pale brown.

Hab. Moulmein. *Exp.* 70 millim.

2490. **Ophiusa dotata,** *Fabr. Ent. Syst.* iii, 2, p. 55; *C. & S.* no. 2596.

Differs from *certior* in having the ante- and postmedial lines of fore wing very oblique, the former not waved, the latter very slightly; the reniform broken up into two spots; a prominent marginal grey band with a waved line on it. Hind wing with

prominent medial incomplete white band; the margin and cilia whitish. Underside with the basal area of both wings pale.

Hab. Throughout India, Ceylon, and Burma. *Exp.* 72–82 millim.

2491. **Ophiusa submira,** *Wlk. Cat.* xiv, p. 1389; *C. & S.* no. 2684.

Differs from *dotata* in being much darker red-brown. Fore wing with the costal and medial areas suffused with bluish white; the reniform entire; the ante- and postmedial lines dark, the latter excurved beyond the cell; the submarginal line farther from the margin, the area beyond it rufous with the marginal line more dentate. Abdomen and hind wing dark reddish fuscous, the latter without the white medial band; the cilia and underside ochreous.

Hab. Sylhet; Burma; Travancore. *Exp.* 72 millim.

2492. **Ophiusa adusta,** *Moore, Lep. Atk.* p. 169, pl. 6, fig. 11; *C. & S.* no. 2600.

Minucia prunicolor, *Moore, Lep. Ceyl.* iii, p. 160, pl. 167, fig. 3; *C. & S.* no. 2606.

Head and thorax bright rufous; the shaft of antennæ whitish; abdomen brownish fuscous. Fore wing bright rufous, suffused with purplish as far as the postmedial line and beyond the submarginal; an outwardly oblique antemedial line joined at inner margin by the obliquely waved postmedial line; the reniform with rufous outline; a double submarginal straight line and marginal dentate line. Hind wing brownish ochreous; the inner area clothed with fuscous hair; a broad diffused submarginal fuscous band. Underside brownish ochreous; fore wing with the cell and a submarginal patch fuscous.

Hab. Assam; Nilgiris; Ceylon. *Exp.* 66 millim.

2493. **Ophiusa cuprea,** *Moore, P. Z. S.* 1867, p. 74; *C. & S.* no. 2602.

Head, thorax, and fore wing fuscous or brownish grey. Fore wing with indistinct short waved subbasal line; an inwardly oblique, slightly sinuous, rufous antemedial line; the orbicular a speck; reniform with rufous edge; the postmedial line inwardly oblique and slightly curved; the submarginal line angled below the costa, the angle filled in with black, and with black above it: a marginal dentate line and series of grey specks. Abdomen and hind wing brownish fuscous, the latter with the basal area palest; the cilia pale.

Hab. Formosa; N.W. and E. Himalayas; Bengal; Central India. *Exp.* 60 millim.

2494. **Ophiusa indistincta,** *Moore, Lep. Atk.* p. 169, pl. 6, fig. 12; *C. & S.* no. 2605.

Ophiodes fervida, *Butl. P. Z. S.* 1883, p. 164; *C. & S.* no. 2604.

Differs from *cuprea* in being redder; the fore wing more

irrorated with black; the ante- and postmedial lines indistinct, the latter with a dark mark at costa; the submarginal line angled outwards at vein 4 as well as 6, and with black inner edge throughout.

Hab. Simla. *Exp.* 50 millim.

2495. **Ophiusa mejanesi,** *Guen. Noct.* iii, p. 232.
Ophisma expedita, *Wlk. Cat.* xiv, p. 1375.
Ophiusa tumidilinea, *Wlk. Cat.* xiv, p. 1433; *C. & S.* no. 2611.

Head and thorax reddish chocolate; shaft of antennæ white; abdomen fuscous. Fore wing reddish chocolate irrorated with dark specks; a short indistinct subbasal line; an outwardly oblique, slightly sinuous, ochreous antemedial line; the orbicular and reniform dark with ochreous edges, the former minute; an ochreous postmedial line excurved beyond the cell, then sinuous to inner margin, often with an indistinct series of fuscous spots beyond it; a submarginal line angled outwards at vein 6, then sinuous to inner margin in the typical form, straight in *tumidilinea*, the area beyond it purplish grey, often with black specks between the veins towards inner margin; a crenulate marginal line. Hind wing with the basal area whitish, more or less suffused with fuscous; the outer area fuscous black; cilia white, dark at centre. Underside with the basal area of both wings white with a cell-spot, the outer area fuscous.

Hab. W. Africa; "N. India"; throughout W. and S. India. *Exp.* 54 millim.

2496. **Ophiusa absentimacula,** *Guen. Noct.* iii, p. 255; *C. & S.* no. 2632.

Pale red-brown. Fore wing with a broad greyish medial band, with a straight dark line on its inner edge and a sinuous line on its outer; a slightly oblique and sinuous postmedial line; a submarginal series of pale specks and marginal series of dark specks. Hind wing pale fuscous; a broad diffused submarginal band, very wide at apex.

Hab. Assam; Ceylon; Andamans; Java. *Exp.* 50 millim.

2497. **Ophiusa duplex,** *Moore, P. Z. S.* 1883, p. 26, pl. 6, fig. 4; *C. & S.* no. 2635.

Differs from *absentimacula* in the medial line of the fore wing being straight; the postmedial line highly angled below costa and slightly waved.

Hab. Sikhim. *Exp.* 58 millim.

2498. **Ophiusa acuta,** *Moore, P. Z. S.* 1883, p. 27, pl. 6, fig. 5; *C. & S.* no. 2664.

Differs from *duplex* in the postmedial line of fore wing not being waved.

Hab. Khásis. *Exp.* 62 millim.

2499. **Ophiusa maturescens**, *Wlk. Cat.* xiv, p. 1382; *C. & S.* no. 2618.

Dark red-brown. Fore wing with an erect antemedial line with some violaceous suffusion beyond it; a postmedial line very highly angled at vein 6, where it is almost met by an oblique dark streak from the apex with indented edge and with the area beyond it paler, with traces of a dentate line on it; three ochreous specks on the costa before apex. Hind wing with the central part of outer area paler.

Hab. Sikhim; Sylhet. *Exp.* 52 millim.

2500. **Ophiusa arcuata**, *Moore, P. Z. S.* 1877, p. 609; *id. Lep. Ceyl.* iii, pl. 171, fig. 3; *C. & S.* no. 2663.

Differs from *maturescens* in having the antemedial line of the fore wing sinuous; a curved medial line beyond the violaceous band meeting the angled postmedial line at costa and inner margin; the outer edge of the oblique apical streak excised.

Hab. Throughout India, Ceylon, and Burma; Andamans; Java. *Exp.* 48–54 millim.

2501. **Ophiusa maturata**, *Wlk. Cat.* xiv, p. 1382; *C. & S.* no. 2617.
Ophiusa falcata, *Moore, Lep. Atk.* p. 171, pl. 6, fig. 14; *C. & S.* no. 2668.

Differs from *maturescens* in the basal area of fore wing being greyer; the outer edge of the violaceous suffusion defined by a straight line; the apical streak straight.

Hab. Khásis; Calcutta; Bombay; Nilgiris; Penang. *Exp.* 52 millim.

2502. **Ophiusa renalis**, n. sp.

Differs from *maturescens* in the head, thorax, and fore wing being golden brown; the antemedial line more oblique; a sinuous medial line interrupted by a large reniform spot; the postmedial line not quite so much angled; the apical streak straight.

Hab. Sikhim; Bombay. *Exp.* 48 millim. Type in B. M.

2503. **Ophiusa joviana**, *Cram. Pap. Exot.* iv, pl. 399 B; *Moore, Lep. Ceyl.* iii, pl. 170, figs. 9, 9 *a* (larva); *C. & S.* no. 2670.
Noctua sinuata, *Fabr. Mant. Ins.* ii, p. 145.
Ophiusa myops, *Guen. Noct.* iii, p. 265.

Differs from *arcuata* in the basal area of the fore wing being violaceous; the antemedial line curved; the postmedial line with a sinuation between the angle and inner margin and with some specks beyond it instead of the dentate line.

Larva with the first two pairs of abdominal prolegs rudimentary; bluish grey above, yellowish beneath and sparsely spotted with black; a larger sublateral spot on 4th somite; two red dorsal tubercles on 11th somite; head grey, spotted with black. Pupa with white efflorescence. Food-plant, *Phyllanthus*.

Hab. Throughout India, Ceylon, and Burma; Andamans; Java. *Exp.* 50–54 millim.

2504. **Ophiusa simillima**, *Guen. Noct.* iii, p. 266; *Moore, Lep. Ceyl.* iii, pl. 170, fig. 8; *C. & S.* no. 2674.

Differs from *joviana* in the antemedial line being curved and with some dark suffusion inside it; some dark suffusion instead of the dark patch inside the postmedial line, which has two slight angles in it beyond the cell; the apical streak slight; an indistinct dentate submarginal line. Hind wing with the cilia pale below the apex.

Hab. Sylhet; Ceylon. *Exp.* 42 millim.

2505. **Ophiusa algira**, *Linn. Syst. Nat.* i, p. 836.
Noctua achatina, *Sulz. Abg. Ges. Ins.* p. 160, pl. 22, fig. 4; *C. & S.* no. 2658.
Noctua stuposa, *Fabr. Ent. Syst.* iii, 2, p. 42; *Moore, Lep. Ceyl.* iii, pl. 171, fig. 7; *C. & S.* no. 2675.
Noctua triangularis, *Hübn. Samml. Eur. Schmett., Noct.* pl. 66, fig. 323.
Ophiusa torrida, *Guen. Noct.* iii, p. 269.
Ophiusa albivitta, *Guen. Noct.* iii, p. 271; *C. & S.* no. 2659.
Ophiusa festina, *Wlk. Cat.* xiv, p. 1425.
Ophiusa properans, *Wlk. Cat.* xiv, p. 1426.
Ophiusa festinata, *Wlk. Cat.* xiv, p. 1432.
Ophiusa properata, *Wlk. Cat.* xiv, p. 1433; *C. & S.* no. 2673.
Ophiusa olympia, *Swinh. P. Z. S.* 1885, p. 466; *C. & S.* no. 2672.
Dysgonia latifascia, *Warr. P. Z. S.* 1888, p. 316; *C. & S.* no. 2670 A.

Differs from *arcuata* in the antemedial line of the fore wing being erect and having a broad, white, slightly suffused band beyond it, which varies in width; the postmedial line angled also between

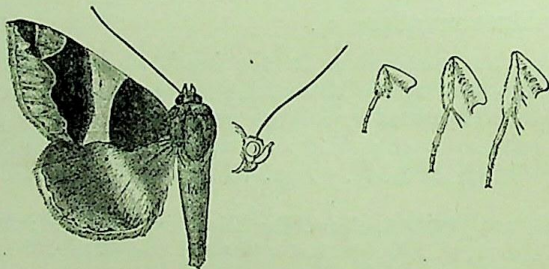



Fig. 280.—*Ophiusa algira*, ♂. 1/1.

veins 3 and 4 and sinuous towards inner margin; the apical streak broken up into two spots. Hind wing with a white medial band; the outer margin grey at centre.

In the form *properata* the postmedial line is highly irregular; in *properans*, from S. Africa, the antemedial line is curved.

The form *stuposa* has the medial band of the fore wing broad and outwardly diffused; the postmedial line usually with only a slight angle at vein 4; *latifascia*, from N.W. India, has the outer edge of the medial band defined by a curved line, the postmedial

line excurved into a quadrate form between veins 6 and 4 instead of having the two angles, and reaching the margin nearer the outer angle, so that the dark patch is very broad.

Hab. Europe; Africa; Mauritius; Japan; China; throughout India, Ceylon, and Burma. *Exp.* 42–46 millim.

2506. **Ophiusa arctotænia,** *Guen. Noct.* iii, p. 272; *C. & S.* no. 2662.

Differs from *algira* in the postmedial line of the fore wing being prominently white from the costa to the angle at vein 6; the medial white band always well defined, narrow, and of almost even width throughout.

Hab. Throughout India, Ceylon, and Burma; Java. *Exp.* 52 millim.

2507. **Ophiusa mirabilis,** *Staud., Romanoff, Mém.* ii, p. 78, pl. iv, fig. 5.
Ophiusa triangulata, *Swinh. P. Z. S.* 1889, p. 414, pl. 43, fig. 5.

Differs from *arctotænia* in being grey-brown; the postmedial line white throughout and produced to an angle near outer margin between veins 3 and 4; an indistinct submarginal white dentate line; the veins whitish beyond the postmedial line. Hind wing with traces of a dentate submarginal line towards anal angle.

Hab. Amur; Karáchi. *Exp.* 44 millim.

2508. **Ophiusa conficiens,** *Wlk. Cat.* xiv, p. 1432; *Butl. Ill. Het.* vi, pl. 112, fig. 5; *C. & S.* no. 2665.

Black. Fore wing with the medial white band tinged with ochreous, narrow, well-defined and oblique; the postmedial line white, angled close to outer margin on vein 6, then sinuous and excurved to near the margin from veins 4 to 2; the margin ochreous white, with a series of black specks. Hind wing fuscous black, with white medial band; the margin and cilia ochreous white, with a black spot and few blue scales near vein 2.

Hab. N.W. Himalayas; Bombay. *Exp.* 56 millim.

2509. **Ophiusa analis,** *Guen. Noct.* iii, p. 271; *C. & S.* no. 2661.

Differs from *arctotænia* in the white band of the fore wing being wider at the costa; the postmedial line more produced at vein 6, so that the white band on it is longer; the apical streak straight and diffused towards the costa. Hind wing with a black and white spot on outer margin at vein 2.

Hab. China; throughout India, Ceylon, and Burma; Java. *Exp.* 50 millim.

2510. **Ophiusa crameri,** *Moore, Lep. Ceyl.* iii, p. 177, pl. 171, fig. 2; *C. & S.* no. 2666.
Dysgonia discalis, *Moore, Lep. Ceyl.* iii, p. 177, pl. 171, fig. 8; *C. & S.* no. 2667.

Differs from *analis* in the postmedial line having the white band reduced to a line, and being slightly outlined with purplish grey from the angle to inner margin.

The variety *discalis* has the whole of the dark patch between the white band and the postmedial line suffused with purplish white.
Hab. Throughout India, Ceylon, and Burma; Andamans. *Exp.* 63 millim.

2511. **Ophiusa amygdalis**, *Moore, Lep. Ceyl.* iii, p. 551, pl. 214, fig. 3; *C. & S.* no. 2660.

Differs from *maturescens* (p. 499) in being suffused with lilacine grey. Fore wing with the antemedial line bent outwards below the cell; the apical streak with its outer edge indented; three white specks on the costa before apex.
Hab. Sikhim; Nilgiris; Travancore; Ceylon. *Exp.* 52 millim.

2512. **Ophiusa onelia**, *Guen. Noct.* iii, p. 256; *C. & S.* no. 2637; *Moore, Lep. Ceyl.* iii, pl. 170, figs. 1, 1 *b* (larva).
Naxia lageos, *Guen. Noct.* iii, p. 256.
Ophiusa umbrosa, *Wlk. Cat.* xxxiii, p. 968.
Ophiusa luteipalpis, *Wlk. Cat.* xxxiii, p. 968; *C. & S.* no. 2671.
Ophiusa obumbrata, *Wlk. Cat.* xxxiii, p. 969.

Dark grey-brown with a purplish tinge; the head and collar usually fulvous. Fore wing suffused with brown; subbasal, ante- and postmedial indistinct waved lines and antemedial and medial ill-defined grey bands; a grey apical patch with whitish edges, and a sinuous dark line from it to inner margin; an indistinct dentate submarginal line; the margin grey. Hind wing with traces of medial and submarginal pale lines near inner margin; the outer margin grey.
Larva with the 1st two pairs of abdominal prolegs rudimentary; greyish white above; olive-grey below, with black spots in somewhat linear series on each somite; a reddish lateral spot on 4th somite. Pupa efflorescent. Food-plant, *Phyllanthus*.
Hab. China; throughout India, Ceylon, and Burma; Penang; Java. *Exp.* 44–46 millim.

B. *The hind wing orange.*

2513. **Ophiusa coronata**, *Fabr. Syst. Ent.* p. 596; *Moore, Lep. Ceyl.* iii, pl. 167, fig. 1, and pl. 166, fig. 5 (larva); *C. & S.* no. 2595.
Noctua leonina, *Fabr. t. c.* p. 596.
Noctua ancilla, *Fabr. Ent. Syst.* iii, 2, p. 17.
Corycia magica, *Hübn. Zutr.* iii, p. 32, figs. 535, 536.

Head and thorax pale reddish brown; abdomen orange, the segments fringed with black. Fore wing irrorated with dark specks; a short subbasal dark line; an outwardly-oblique, slightly sinuous, antemedial line; the orbicular small, round, and grey; the reniform large and chocolate, ringed with grey or broken up into grey or chocolate grey-ringed spots; a slightly inwardly-oblique postmedial line; a pale submarginal line, slightly bent below the costa. Hind wing orange, with broad medial and submarginal fuscous black bands not reaching inner margin, the latter widest

towards costa. Underside orange; the costal and outer areas of both wings dark-speckled, and with a slight reddish suffusion; a black patch near outer angle of fore wing.

Larva dull sienna-brown longitudinally striped with black-brown; a dorsal black spot on 8th somite; paired black dorsal tubercles on 10th and 11th somites; a lateral yellow-edged spot on 5th somite; underside dark; head striped with black. Food plant, *Quisqualis indica*.

Hab. Throughout India, Ceylon, and Burma; Andamans; Java; Australia. *Exp.* 82–96 millim.

2514. **Ophiusa discriminans**, *Wlk. Cat.* xiv, p. 1358; *Hmpsn. Ill. Het.* ix, pl. 165, fig. 13; *C. & S.* no. 2603.

Head and thorax reddish orange; palpi grey; sides of head chestnut; abdomen orange, with a black dorsal patch near extremity. Fore wing greenish orange, the outer third reddish, slightly irrorated with black; a faint outwardly-oblique, sinuous antemedial line, and inwardly-oblique crenulate postmedial line; the orbicular a dark speck; the reniform grey with dark edge; two grey and black subapical spots; a series of grey submarginal specks and large grey patch at outer angle; the cilia grey. Hind wing orange, with broad submarginal fuscous-black band.

Hab. Ceylon. *Exp.* 65 millim.

2515. **Ophiusa indiscriminata**, *Hmpsn. Ill. Het.* ix, p. 111, l. 176, fig. 23 (larva).
Minucia discriminans, *Moore, Lep. Ceyl.* iii, pl. 166, fig. 4 (*nec Wlk.*).

Differs from *discriminans* in the head and thorax being yellowish grey; abdomen without the black patch. Fore wing yellowish grey without black specks; a maculate line beyond the postmedial line; a grey and dark patch beyond the subapical spots, and hardly a trace of the patch at anal angle; a dentate submarginal line with the area beyond it reddish. Hind wing with the black reduced to a submarginal medial patch.

Larva pale brown, with numerous waved longitudinal black lines, between which are series of black specks; some red between each pair of legs, and a black patch between each pair of prolegs; small paired dorsal prominences on 11th somite.

Hab. Ceylon. *Exp.* 76 millim.

2516. **Ophiusa tirrhaca**, *Cram. Pap. Exot.* ii, pl. 172, fig. E.
Noctua vesta, *Esp. Schmett. Eur.* iv, pl. 141, fig. 1.
Noctua olivacea, *Vill. Ent. Linn.* ii. p. 270, pl. 5, fig. 9.
Noctua auricularis, *Hübn. Samml. Eur. Schmett.*, *Noct.* pl. 66, fig. 321.
Ophiodes hottentota, *Guen. Noct.* iii, 229.
Ophiodes separans, *Wlk. Cat.* xiv, p. 1357; *C. & S.* no. 2608.

Head and thorax greenish yellow; abdomen orange. Fore wing greenish yellow, with slightly darker striæ; an indistinct outwardly-oblique antemedial line meeting a sinuous inwardly-oblique postmedial line arising from a dark spot on the costa at

inner margin; the orbicular a dark speck; reniform brown; an irregularly dentate submarginal line, with two black subapical lunules on it; the area beyond it reddish; a crenulate marginal line. Hind wing orange, with broad submarginal black band not reaching costa or inner margin and sometimes almost obsolete.

Hab. Europe; S. Africa; Madagascar; throughout India. *Exp.* 64–80 millim.

C. *Hind wing crimson.*

2517. **Ophiusa honesta,** *Hübn. Samml. Exot. Schmett.* ii, *Index,* p. 4, pl. 203, figs. 1, 2; *C. & S.* no. 2598.
Noctua microrhæa (?), *Fabr. Ent. Syst.* iii, 2, p. 17.

Head and thorax reddish chestnut; the third joint of palpi black; abdomen crimson. Fore wing reddish chestnut, slightly irrorated with dark scales; traces of a sinuous antemedial line with three white specks on it; reniform grey, the lower part more or less completely filled in with black; a curved postmedial series of white specks with an indistinct band beyond it angled at vein 6 and met by a dark streak from the apex; a marginal series of specks. Hind wing crimson, with black submarginal medial patch.

Hab. Philippines; throughout India, Ceylon, and Burma; Andamans. *Exp.* 84–104 millim.

SECT. II. Males with a cleft running the whole length of the mid tibia and containing a mass of flocculent scales.

2518. **Ophiusa fulvotænia,** *Guen. Noct.* iii, p. 272; *Moore, Lep. Ceyl.* iii, pl. 171, fig. 1; *C. & S.* no. 2669.

Differs from *crameri* (p. 501) in being red-brown. Fore wing with the medial band suffused with purplish; the postmedial line dark throughout, and with an indistinct dentate line beyond it. Hind wing with a medial orange band, wide towards the costa.

Hab. Japan; China; Formosa; throughout India, Ceylon, and Burma; Sumatra; Java. *Exp.* 70–80 millim.

SECT. III. Male with a large tuft of hair on fore femora.

2519. **Ophiusa trapezium,** *Guen. Noct.* iii, p. 231; *C. & S.* no. 2609.
Ophisma cognata, *Wlk. Cat.* xxxiii, p. 958.

Head and thorax pale rufous; abdomen pale fuscous; the femoral tufts black. Fore wing greenish ochreous irrorated with dark scales; an outwardly-oblique antemedial dark line; a dark speck representing the orbicular; the reniform rufous with dark centre and edge; an obliquely curved postmedial line; a double straight submarginal line, the area beyond it reddish suffused with purple with a dentate marginal line. Hind wing whitish,

with the outer area fuscous. Underside whitish; the costal and outer areas of both wings brownish and dark-speckled; fore wing with a fuscous submarginal band.

Hab. Assam; Nilgiris; Travancore; Ceylon. *Exp.* 66 millim.

2520. **Ophiusa triphænoides,** *Wlk. Cat.* xiv, p. 1358; *C. & S.* no. 2610.

Head and thorax grey; palpi dark; abdomen fuscous. Fore wing violaceous grey irrorated with dark scales; the costa ochreous; an antemedial, outwardly-oblique, slightly curved, pale and rufous line; the orbicular a black speck; reniform brown with dark outline; a postmedial, pale and rufous, inwardly-oblique, slightly sinuous line; a submarginal sinuous line angled outwards at vein 6, the angle filled in with black and with black above it. Hind wing with the basal area brownish ochreous, the outer area fuscous black; cilia white towards apex. Underside with the basal area ochreous white, the outer fuscous.

Hab. Formosa; N.W. and E. Himalayas; Bengal; W. and S. India. *Exp.* 60 millim.

Genus **LAGOPTERA.**

Lagoptera, *Guen. Noct.* iii, p. 223 (1852).

Type, *L. juno*, Dalm.

Range. W. Africa; Japan; China; Himalayas; Nilgiris; Australia.

Differs from *Ophiusa* in the abdomen being clothed with coarse hair on the back and sides, the lateral tufts in the male being large; mid and hind tibiæ spined. Fore wing narrower, with the costa more arched near base, then nearly straight to apex, in the male slightly excised; the apex more produced, and outer margin more oblique. Hind wing of male with very long radiating hair on inner margin; vein 1 *a* fringed with hair below.

2521. **Lagoptera juno,** *Dalm. Anal. Entom.* p. 52.
Ophideres elegans, *Van der Hoev. Tijd. Nat. Gesch.* vii, p. 280, pl. 5, figs. 6, *a*, *b*; *C. & S.* no. 2597.
Lagoptera multicolor, *Guen. Noct.* iii, p. 226.

Head and thorax chestnut or grey-brown; abdomen crimson with lateral white specks, the dorsum grey-brown except the terminal segment. Fore wing chestnut, grey-brown, or ochreous brown; a short subbasal rufous line; an antemedial, slightly sinuous, outwardly-oblique line; the orbicular a speck; reniform with indistinct outline, and often with black spots in both upper and lower portions; an outwardly-oblique, slightly sinuous, postmedial rufous line; a curved line from apex to outer angle; the inner margin rufous. Hind wing with the basal area black, with bluish-white ill-defined medial band not reaching costa or inner margin; the outer area crimson, with a patch of black specks at

centre. Underside crimson; the apical areas black-speckled: fore wing with cell-spot and submarginal medial black patch.

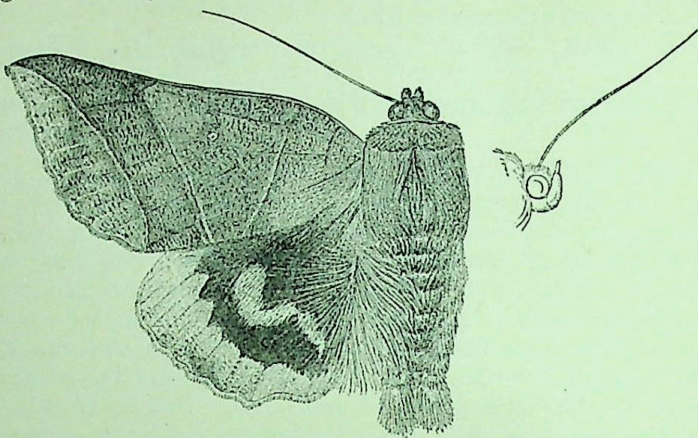



Fig. 281.—*Lagoptera juno*, ♂. ⅘.

Hab. Japan; China; throughout the Himalayas; Nilgiris. *Exp.* 90–100 millim.

Genus **ISOURA**, nov.

Type, *I. fuscicollis*, Butl.

Range. N.W. Himalayas.

Differs from *Ophiusa* in the abdomen being flattened; the fore wing of almost even width throughout; tibiæ of male very hairy, without spines.

2522. **Isoura fuscicollis**, *Butl. Ill. Het.* vii, p. 56, pl. 127, fig. 4.

Head, collar, and fore legs dark chocolate; thorax reddish grey; abdomen dull yellow, reddish brown at extremity. Fore wing

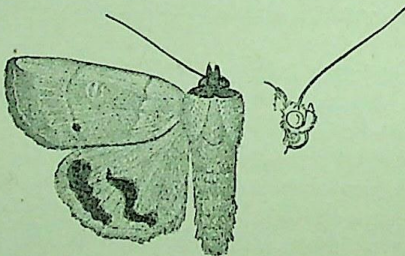



Fig. 282.—*Isoura fuscicollis*, ♂. ⅘.

reddish grey, sometimes irrorated with a few black scales; an oblique, slightly waved, indistinct antemedial line, and slightly curved postmedial line with a black spot on it towards inner margin; a marginal series of minute specks; cilia red-brown. Hind wing bright yellow, with a doubly-curved postmedial black band from vein 7 to anal angle; a marginal band from apex to vein 2.

Underside with complete postmedial band to both wings; hind wing with a cell-spot.

Hab. Dharmsála. *Exp.* 52 millim.

Genus HYPÆTRA.

Hypætra, *Guen. Noct.* iii, p. 259 (1852).
Avatha, *Wlk. Cat.* xiii, p. 1106 (1857).
Pseudathyrma, *Butl. Ann. N. H.* 1892, p. 299.

Type, *H. noctuoides*, Guen.

Range. Khásis; Sylhet; Nilgiris; Ceylon; Burma; Andamans; Sumatra; Java; Borneo; Society Islands.

Palpi upturned and met by a sharp frontal tuft, the 2nd joint reaching vertex of head and roughly scaled, the 3rd long and obliquely porrect; antennæ usually minutely ciliated; thorax and abdomen smoothly scaled; the fore tibiæ fringed with long hair in male; the mid tibiæ spined. Fore wing with the apex somewhat rounded.

SECT. I. (*Hypætra*). Males with the subcostal neuration of fore wing not distorted, and without sexual patches on fore and hind wing.

A. *Antennæ of male minutely ciliated.*

2523. **Hypætra noctuoides**, *Guen. Noct.* iii, p. 259; *C. & S.* no. 2646.

Pale red-brown; palpi black at sides. Fore wing with very indistinct subbasal, antemedial, medial, postmedial, and submarginal waved lines; the 1st, 2nd, and 4th arising from blackish patches on the costa; the antemedial line with a large pale-edged black lunule on it below the cell; the postmedial with a double curve beyond the cell, the lower including a grey patch.

Hab. Sylhet; Burma; Java. *Exp.* 46 millim.

2524. **Hypætra includens**, *Wlk. Cat.* xiii, p. 1107; *C. & S.* no. 2654; *Moore, Lep. Ceyl.* iii, pl. 170, fig. 6.
Hypætra trigonifera, *Wlk. Cat.* xiv, p. 1411; *C. & S.* no. 2655.
Hypætra complacens, *Wlk. Cat.* xiv, p. 1414.

Differs from *noctuoides* in the fore wing being greyer and more suffused with fuscous; the spots on the costa absent; the lunule on the antemedial line sometimes obsolescent; a dark spot in the cell; the postmedial line S-shaped beyond the cell with a blackish patch in its upper curve. Hind wing with the cilia whitish at apex and near anal angle.

Hab. Nilgiris; Ceylon; Java; Society Islands. *Exp.* 40–46 millim.

2525. **Hypætra curvifera**, *Wlk. Cat.* xiv, p. 1412; *Moore, Lep. Ceyl.* iii, pl. 170, fig. 4; *C. & S.* no. 2650.
Ophiusa frontalis, *Wlk. Cat.* xiv, p. 1434; *C. & S.* no. 2653.
Achæa expectans, *Wlk. Cat.* xv, p. 1827; *C. & S.* no. 2652.

Differs from *includens* in being greyish, reddish, or very dark

brown, much irrorated with black. Fore wing with the lines almost or quite obsolete, the postmedial being most distinct; the black patches absent and only represented by a fuscous patch beyond the cell, sometimes conjoined to a triangular shade on the costa.

Hab. Nilgiris; Ceylon. *Exp.* 46 millim.

2526. **Hypætra bubo,** *Hübn. Zutr.* iv, p. 13, figs. 633, 634.
Hypætra perficiens, *Wlk. Cat.* xiv, p. 1412; *C. & S.* no. 2647.
Hypætra condita, *Wlk. Cat.* xiv, p. 1413; *C. & S.* no. 2649.

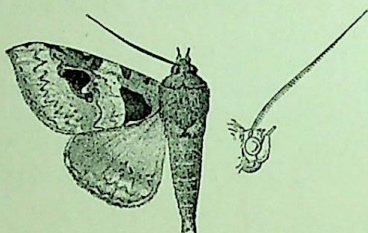



Fig. 283.—*Hypætra bubo*, ♂. ½.

Differs from *noctuoides* in the head, thorax, and fore wing being purplish grey. Fore wing with the medial and outer areas palest; the black lunules on the antemedial and postmedial lines extremely large and produced at their angles; the lines more distinct and dentate; some pale specks on the costa. Hind wing with a diffused pale streak near anal angle; the cilia pale at apex and anal angle; underside with a medial maculate line.

Hab. Shillong; Nilgiris; Ceylon; Andamans. *Exp.* 56 millim.

*2527. **Hypætra? remigioides,** *Guen. Noct.* iii, p. 230; *C. & S.* no. 2607.

Head and thorax fleshy grey; abdomen yellow, reddish below. Fore wing grey; the costa and markings of costal area velvety brown; the antemedial line straight and oblique, with dark suffusion inside it, and with a pale-edged black patch inside it on inner margin; the postmedial line waved, straight near costa; reniform large and indistinct, with a large bilobed patch below it, from which three waved lines run to inner margin; orbicular a small ring-spot; the submarginal line irregularly dentate, with a black speck on each nervule. Hind wing fulvous yellow, with an indistinct submarginal fuscous band with a line above it near inner margin.

Hab. "Central India." *Exp.* 55 millim.

B. *Antennæ of male with long branches on the outer sides, very short branches and long stiff bristles on the inner side, a tuft of hair on upperside of shaft near base.*

2528. **Hypætra apicalis,** *Moore, P. Z. S.* 1879, p. 405, pl. 33, fig. 7.
Sphetta moorei, *Cotes & Swinh. Cat. Moths Ind.* p. 172; *C. & S.* no. 1141.

Head and collar whitish; palpi fuscous at sides; thorax purplish fuscous; abdomen fuscous. Fore wing purplish fuscous, with very

indistinct waved subbasal and antemedial lines; a white spot in cell; the reniform white, with an ill-defined whitish patch above it; some white specks on costa; the postmedial line arising near apex, slightly dentate and very obliquely curved to vein 2, then straight to inner margin. Hind wing fuscous.

Hab. Sikhim; Ceylon. *Exp.* 40 millim.

SECT. II. (*Pseudathyrma*). Fore wing of male with the subcostal nervure curved downwards and enclosing a large patch of differently formed scales; the subcostal nervules distorted; hind wing with a patch of differently formed scales on the outer margin between veins 5 and 6.

2529. **Hypætra complens**, *Wlk. Cat.* xiv, p. 1415.
Cropia glaucofascia, *Wlk. Cat.* xv, p. 1804.
Hypætra stigmata, *Moore, P. Z. S.* 1877, p. 610; *C. & S.* no. 2648.

♂. Dark and red-brown. Fore wing with ill-defined subbasal, oblique ante- and postmedial, and waved submarginal lines, a diffused dark patch below the cell inside the antemedial line; some specimens with a medial ochreous band; the postmedial with a black irregular S-shaped mark beyond the cell, with a dark patch in its lower bend; a fuscous band beyond the postmedial line. Hind wing with a dark streak at anal angle; the cilia whitish at apex and anal angle; underside with cell-spot and medial series of spots. Palpi white in front.

♀ redder.

Hab. Andamans; Sumatra. *Exp.*, ♂ 40, ♀ 44 millim.

Genus ANEREUTHINA.

Anereuthina, *Hübn. Zutr.* ii, 23, no. 163 (1818).

Type, *A. renosa*, Hübn., from Java.

Range. Burma; Java.

Differs from *Hypætra* in the tibiæ being more hairy in both

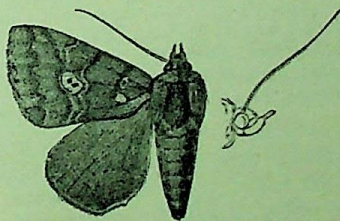



Fig. 284.—*Anereuthina lilach*, ♂. 1.

sexes; the mid tibiæ not spined. Hind wing with the anal angle somewhat truncate and the outer margin slightly angled at vein 2.

Larvæ with four pairs of abdominal prolegs, the first rudimentary.

2530. **Anereuthina lilach**, *Guen. Noct.* iii, p. 260; *C. & S.* no. 2645.
Hypætra ocularia, *Swinh. Trans. Ent. Soc.* 1890, p. 246, pl. 8, fig. 4.

Deep red-brown; the palpi black at sides, the 3rd joint and fore tibiæ grey. Fore wing slightly irrorated with grey, especially the outer margin; indistinct subbasal, antemedial, medial, postmedial, and submarginal lines, the antemedial line with a pale green patch on it below the cell; the postmedial with two black specks at lower angle of cell enclosed in a large green ocellus in female, only the lower one enclosed in male; the submarginal line with a series of black specks. Abdomen and hind wing dark fuscous, the latter irrorated with grey towards anal angle; the cilia red-brown.

Hab. Bassein. *Exp.* 50 millim.

2531. **Anereuthina xanthoptera**, n. sp.

♀. Ochreous; palpi grey with the base black. Fore wing slightly irrorated with fuscous; a black speck in cell; slight fuscous marks representing the postmedial line beyond cell and above vein 1; two waved series of submarginal fuscous spots and a series of grey marginal lunules. Hind wing with broad blackish marginal band decreasing in width to anal angle, and a grey marginal waved line; cilia brownish. Underside with diffused fuscous submarginal band to both wings.

Hab. Toungngoo, Burma. *Exp.* 44 millim. Type in coll. Druce.

Genus SERRODES.

Serrodes, *Guen. Noct.* iii, p. 251 (1852).

Type, *S. inara*, Cram.

Range. Africa; throughout the Oriental region; Australia.

Differs from *Anereuthina* in the costa of the fore wing being slightly arched before the apex; the cilia of fore and hind wings strongly crenulate; the tibiæ extremely hairy in both sexes; mid tibiæ of male with dense long hair lying along their inner sides.

Larvæ with four pairs of abdominal prolegs, the first rudimentary.

2532. **Serrodes inara**, *Cram. Pap. Exot.* iii, pl. 239, E; *C. & S.* no. 2631
Serrodes campana, *Guen. Noct.* iii, p. 252; *Moore, Lep. Ceyl.* iii, pl. 167, figs. 5, 5*a*; *C. & S.* no. 2630.
Serrodes nigha, *Guen. Noct.* iii, p. 253.
Ophiodes basisignum, *Wlk. Cat.* xiv, p. 1359; *C. & S.* no. 2601.
Phoberia korana, *Feld. Reis. Nov.* pl. 116, fig. 3.

Head, thorax, and fore wing dark or red or grey-brown. Fore wing with a subbasal dark red-brown spot on the costa, with a line from its lower edge; a similar antemedial spot and large lunule below the cell with a highly excurved line from its lower edge; the reniform broken up into a number of tesselated spots with pale edges, and with rufous marks on the costa above it; a double straight postmedial line, angled below the costa. Abdomen and hind wing fuscous, the latter with traces of a medial pale line; the cilia pale at apex and anal angle.

The form *inara* has the head, thorax, and fore wing pale lilaceous grey, with all the markings of the fore wing slight; *campana* has

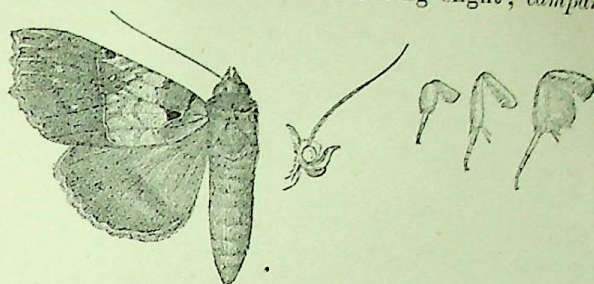



Fig. 285.—*Serrodes inara*, ♂. ½.

the head, thorax, and basal and outer areas of fore wing brown and the markings large; *nigha* is brown throughout.

Hab. Africa; throughout India, Ceylon, and Burma; Java; Borneo; Australia. *Exp.* 52–74 millim.

Genus DORDURA.

Dordura, *Moore, Lep. Atk.* p. 170 (1882).

Type, *D. aliena*, Wlk.

Range. Khásis; Travancore; Ceylon; Burma; Gilolo.

Palpi with the 2nd joint reaching above vertex of head and roughly scaled, the 3rd of moderate length and porrect; antennæ minutely ciliated in male; thorax and abdomen smoothly scaled; tibiæ without spines; fore and mid legs with long tufts of hair from the femoro-tibial joint. Fore wing with the apex slightly produced and acute.

2533. **Dordura aliena**, *Wlk. Cat.* xxxiii, p. 964; *C. & S.* no. 2656.
Dordura apicalis, *Moore, Lep. Atk.* p. 170, pl. 5, fig. 20; *C. & S.* no. 2657.
Dysgonia tincta, *Hmpsn. Ill. Het.* ix, p. 112, pl. 165, fig. 3.

♂. Reddish brown. Fore wing with waved subbasal line: a double antemedial line; a dark spot in cell; a postmedial line angled

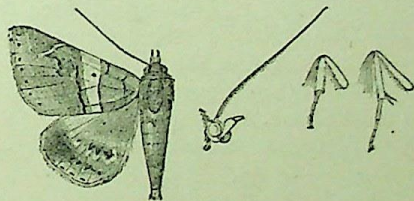



Fig. 286.—*Dordura aliena*, ♂. ½.

outwards below costa, irregularly excurved beyond cell, then bent inwards to below the narrow reniform spot, and straight and double to inner margin; a subtriangular chocolate mark with pale edges on the costa before apex; traces of a submarginal pale waved

line; a submarginal series of black specks. Hind wing with the apical area fuscous; medial and postmedial ill-defined, waved, dark lines, and submarginal series of black specks.

Some specimens have a medial ochreous band to fore wing.

♀ with the markings of fore wing much less distinct; the triangular patch almost obsolete.

Hab. Khásis; Travancore; Ceylon; Rangoon; Gilolo. *Exp.* 44 millim.

Genus DELGAMMA.

Delgamma, *Moore, Lep. Ceyl.* iii, p. 168 (1885).

Type, *D. pangonia*, Guen.

Range. Sylhet; Ceylon; Andamans; Borneo.

Palpi upturned, the 2nd joint reaching vertex of head and smoothly scaled, the 3rd of moderate length; a short frontal tuft; antennæ fasciculate in male; thorax and abdomen smoothly scaled; tibiæ without spines and moderately hairy; hind tarsi with the first joint fringed above. Fore wing with the apex somewhat acute. Hind wing of male with the cell short and a large oval depression beyond it, veins 6 and 7 being bent and approaching vein 8; veins 4 and 5 depressed and running along 3 to near margin.

2534. **Delgamma pangonia**, *Guen. Noct.* iii, p. 214.

Delgamma calorifica, *Wlk. Cat.* xiv, p. 1406; *Moore, Lep. Ceyl.* iii, pl. 168, figs. 4, 4*a*; *C. & S.* no. 2636.

Bright rufous brown; palpi and sides of frontal tuft black. Fore wing with very indistinct subbasal and antemedial waved lines; a black speck at middle of cell and two at end of it; a nearly straight postmedial whitish line, the area beyond it bright purple, with a dentate submarginal line and one or two white-edged chocolate apical patches; a crenulate marginal line; the cilia dark. Hind wing with whitish postmedial line, except on costal area, the area beyond it bright purple, with some black and white marks just beyond the line; a crenulate marginal line; the cilia dark.

Fig. 287.—*Delgamma pangonia*, ♂. ½.

Hab. Sylhet; Ceylon; Andamans; Borneo. *Exp.*, ♂ 42, ♀ 52

Genus SYMPIS.

Sympis, *Guen. Noct.* iii, p. 343 (1852).

Type, *S. rufibasis*, Guen.

Range. Throughout India, Ceylon, and Burma; Java.

Palpi upturned and smoothly scaled, the 2nd joint reaching above vertex of head, the 3rd long and slightly curved; antennæ ciliated in male; thorax and abdomen smoothly scaled; the tibiæ not spined, and clothed with short hair; the 1st joint of hind tarsi fringed with hair on the upperside. Fore wing with the apex somewhat produced and acute.

2535. **Sympis rufibasis**, *Guen. Noct.* iii, p. 344, pl. 24, fig. 1; *C. & S.* no. 2761.

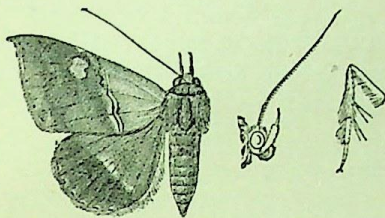



Fig. 288.—*Sympis rufibasis*, ♂. ½.

♂. Head and thorax orange-red; abdomen red-brown. Fore wing with the basal area orange-red, bounded by an oblique blue line; the outer area red-brown, with a large scarlet lunule beyond the cell and a white speck on the costa above it; an indistinct, irregularly dentate, submarginal line; a marginal series of specks. Hind wing fuscous, with incomplete medial white band and waved whitish marginal line. Underside almost entirely suffused with grey; a crenulate postmedial line.

♀ without the scarlet lunule on fore wing.

Hab. Throughout India, Ceylon, and Burma; Sumatra; Java. *Exp.* 48 millim.

Genus BANIANA.

Baniana, *Wlk. Cat.* xv, p. 1843 (1858).
Birtha, *Wlk. Cat.* xxxiii, p. 976 (1865).

Type, *B. significans*, Wlk., from the W. Indies.

Range. W. Indies; S. America; Africa; Sikhim; Sylhet; Peninsular India; Ceylon; Burma.

Palpi usually reaching vertex of head, the 3rd joint minute; thorax and abdomen smoothly scaled. Fore wing with the apex slightly produced and falcate. Hind wing with vein 5 from above lower angle of cell.

SECT. I. Fore wing with no tuft of scales on inner margin before middle. Male with long bristles and cilia to the antennæ.

A. (Baniana). *Mid tibiæ with tufts of long hair on inner side; palpi reaching vertex of head.*

2536. **Baniana semilugens**, *Wlk. Cat.* xii, p. 814; *Hmpsn. Ill. Het.* viii, pl. 143, fig. 13; *C. & S.* no. 1905.
Baniana luteiceps, *Wlk. Cat.* xxxiii, p. 1000.

Head and collar fulvous; thorax and abdomen grey-brown.

Fore wing purplish grey; indistinct subbasal and antemedial waved lines; black specks at middle and end of cell, the latter with fuscous spot on costa above it; a sinuous postmedial ochreous line sharply recurved from vein 4 to centre of discocellulars and with black suffusion beyond it. Hind wing fuscous.

Hab. Nilgiris; Moulmein. *Exp.* 32 millim.

*2537. **Baniana ? conjugata,** *Moore, P. Z. S.* 1881, p. 369; *C. & S.* no. 1904.

Head, thorax, and abdomen ochreous brown irrorated with brown. Fore wing dark umber-brown; the costa pale, with some dark strigæ from it; the orbicular elongate, dark with pale edges, and conjoined to the similar but erect reniform; a pale streak below the cell.

Hab. Sikhim. *Exp.* 28 millim.

B. *Palpi with the 2nd and 3rd joints longer; male with tufts of hair from fore coxæ; mid legs with a long tuft from femoro-tibial joint; mid and hind tibiæ fringed with hair.*

2538. **Baniana polyspila,** *Wlk. Cat.* xxxiii, p. 966; *C. & S.* no. 2387.
Athyrma tesselata, *Moore, P. Z. S.* 1867, p. 76; *C. & S.* no. 2388.

♂. Pale reddish grey; the head and collar golden brown; the tufts on fore coxæ black. Fore wing with jet-black pale-edged markings; a speck at base; a large irregular patch from below middle of cell to inner margin, with a speck inside it on the margin; the orbicular small; the reniform large; a large irregular patch from below end of cell to vein 1, with a pale line across it and a

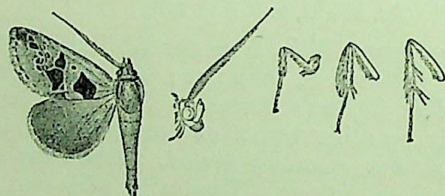



Fig. 289.—*Baniana polyspila,* ♂. ½.

spot below it on the margin at its inner side; its upper corner joined by a postmedial series of spots; a large subapical spot, and another between veins 3 and 5 with a speck above it; a marginal series of black specks. Hind wing fuscous.

♀. Fore wing with the base of costa black, with ochreous outer edge; the cell and basal inner area to near end of cell black; a doubly-angled antemedial ochreous line from subcostal nervure to inner margin; a medial line highly angled in the cell, where it almost touches the antemedial line, and also below the cell, where it sends a branch outwards round the black area on inner margin;

the postmedial markings consist of a large ochreous-edged black spot below costa, with a black patch beyond it and some small spots between veins 2 and 5, with a larger patch beyond them; a marginal series of ochreous-edged lunules.

Hab. Sikhim; Sylhet; Burma. *Exp.*, ♂ 42, ♀ 50 millim.

2539. **Baniana divulsa**, *Wlk. Cat.* xxxiii, pl. 966; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 4; *C. & S.* no. 2386.

Fuscous brown; the head and collar banded with black. Fore wing with a black speck at base; an antemedial dark line expanding into a large irregular black patch with pale edges below the cell; a pale-edged black spot in cell; a pale sinuous and angled line from near apex to vein 3, thence very sharply recurved to centre of discocellulars and slightly sinuous to inner margin, and with black and rufous suffusion beyond it; a postmedial series of black specks from the costa to the recurved line; traces of a submarginal line; some pale specks on costa towards apex. Hind wing dark fuscous.

Hab. Sylhet; Bombay; Travancore; Ceylon. *Exp.* 40 millim.

SECT. II. Fore wing with a tuft of scales on inner margin before middle.

A. *Antennæ of male with long bristles and cilia; mid tibiæ very short, swollen, and without spurs.*

2540. **Baniana intorta**, *Swinh. Trans. Ent. Soc.* 1891, p. 150; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 3.

Head and collar bright fulvous; thorax and abdomen pale grey. Fore wing pale grey, with a large subtriangular deep chocolate patch with pale edges on inner area before the middle; ante- and postmedial rufous strigæ from costa; a dark speck at end of cell; a postmedial pale line sharply recurved to lower angle of cell, then straight to inner margin; the area beyond it suffused with deep chocolate, growing paler towards outer margin; traces of an irregular submarginal line. Hind wing fuscous.

Hab. W. Africa; Natal; Bombay; Ceylon. *Exp.* 28 millim.

B. *Antennæ of male with bristles and cilia; mid tibiæ normal.*

2541. **Baniana lunifera**, n. sp.

♂. Purplish fuscous. Fore wing with a large black antemedial lunule from cell to inner margin, its inner edge angled, its outer edge whitish; a pale-edged black spot in cell; the postmedial line sinuous from costa to vein 4, then recurved to upper angle of cell, thence curved to inner margin, pale with black suffusion beyond it in the curve and a black angled line beyond it from near costa to vein 4; a marginal series of white specks and streaks at outer

angle. Hind wing fuscous, with blackish medial and submarginal diffused bands.

Hab. Ganjam. *Exp.* 34 millim. Type in coll. Elwes.

C. (Birtha). *Antennæ of male bipectinated*; *mid tibiæ clothed with very long hair*; *fore wing with both ante- and postmedial tufts on inner margin.*

2542. **Baniana insulata,** *Wlk. Cat.* xxxiii, p. 976; *Hmpsn. Ill. Het.* ix, pl. 163, fig. 8; *C. & S.* no. 2187.

Head and collar bright fulvous; thorax and abdomen grey-brown. Fore wing grey-brown with slight purplish suffusion; an antemedial fulvous band with pale edges, expanding into a large patch below the cell; the orbicular and reniform deep rufous with pale edges and a patch on costa above them, the former small; an indistinct postmedial line very sharply excurved from vein 3 to lower angle of cell, with a rufous patch on it at inner margin and some pale patches beyond it; a triangular rufous patch on costa before apex, with two white specks on the costa; a marginal series of dark specks. Hind wing greyish fuscous with dark marginal line; underside with cell-spot and postmedial line.

Hab. Old Calabar; Ceylon. *Exp.* 36 millim.

Genus BORSIPPA.

Borsippa, *Wlk. Cat.* xv, p. 1756 (1858).
Aramuna, *Moore, Lep. Ceyl.* iii, p. 35 (1885).

Type, *B. quadrilineata*, Wlk.

Range. Congo; throughout India, Ceylon, and Burma; Borneo.

Palpi slender and reaching vertex of head, the 3rd joint minute; thorax and abdomen smoothly scaled; tibiæ fringed with hair. Fore wing with the apex rounded. Hind wing with vein 5 from lower angle of cell.

SECT. I. Male with the patagia very minute and with tufts of elongate scales from them; the anal tuft large.

A. (Borsippa). *Male with the antennæ ciliated*; *no sexual patches on either wing.*

2543. **Borsippa quadrilineata,** *Wlk. Cat.* xv, p. 1756.
Borsippa marginata, *Moore, Lep. Atk.* p. 173; *C. & S.* no. 2318.

Reddish grey-brown. Fore wing with oblique straight subbasal and antemedial rufous lines; incurved medial and postmedial lines, the former double; a large semicircular black patch with an indentation in its upper edge on outer margin; a marginal series of pale specks. Hind wing dark fuscous.

In *quadrilineata*, from Borneo, there is a prominent black spot

at end of cell of fore wing, which is almost obsolete in the more ochreous form *marginata*, from Sikhim.

Hab. Sikhim; Borneo. *Exp.* 36 millim.

B. (Aramuna). *Male with the antennæ fasciculate; the anal tuft very large; underside of fore wing with a patch of differently formed scales on median nervure; hind wing shortened, with a large patch of flocculent scales below costa, the costal neuration being distorted downwards.*

a. *Male with a patch of curved woolly hair on apical part of margin of hind wing.*

2544. **Borsippa pallens,** *Moore, Lep. Atk.* p. 172, pl. 5, fig. 9; *C. & S.* no. 2310.

Aramuna marginata, *Moore, Lep. Ceyl.* iii, p. 36, pl. 149, fig. 6; *C. & S.* no. 1924.
Borsippa punctilineata, *Hmpsn. Ill. Het.* viii, p. 83, pl. 146, fig. 14.
Bagada diffisa, *Swinh. Trans. Ent. Soc.* 1890, p. 224, pl. vii, fig. 17.
Herminia orthosiana, *Swinh. P. Z. S.* 1885, p. 473, pl. 28, fig. 15; *C. & S.* no. 2958.

♂. Ochreous brown. Fore wing with traces of antemedial, medial, and postmedial speckled lines; a purplish rufous marginal band narrowing to apex and outer angle and with a slight indentation near apex; a marginal series of pale specks. Hind wing whitish.

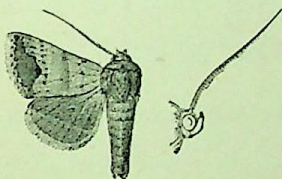



Fig. 290.
Borsippa pallens, ♀. ½.

♀. The inner edge of the marginal band of hind wing more curved inwards at centre; in the form *diffisa* angled inwards with a black spot at the angle; in the form *orthosiana* almost straight.

Hab. Nágas; Bhámo; Bombay; Nilgiris; Ceylon. *Exp.* 32 millim.

b. *Male with a patch of curved woolly hair on vein 2 of hind wing, and none at apex.*

2545. **Borsippa lutosa,** *Swinh. Trans. Ent. Soc.* 1890, p. 225, pl. vii, fig. 11.

♂. Head pale; thorax and abdomen fuscous. Fore wing ochreous grey, suffused with fuscous; the inner area purplish; faint traces of waved lines; a submarginal series of small black lunules and oblique fuscous shade from apex. Hind wing pale fuscous.

Hab. Rangoon. *Exp.* 36 millim.

SECT. II. Male with cilia and bristles to antennæ; the patagia normal; abdomen with a chitinous cap covering the anal tufts; hind wing with tuft of long hair on upperside of costa.

2546. **Borsippa sejuncta**, *Wlk. Cat.* ix, p. 109; *C. & S.* no. 1692.
Caradrina paucifera, *Wlk. Cat.* x, p. 298; *C. & S.* no. 2113.

Reddish or greenish grey; palpi black with the extremity white. Fore wing with speck at end of cell; a sinuous submarginal series of pale and dark lunules; a marginal series of dark specks. Hind wing dark fuscous.

Hab. Ganjam; Travancore; Moulmein. *Exp.* 34 millim.

SECT. III. Females only available for study.

2547. **Borsippa hypenoides**, *Moore, P. Z. S.* 1881, p. 354, pl. 38, fig. 19; *C. & S.* no. 1793.

♀. Chestnut-red or dark purplish brown; palpi black at base; a black spot on metathorax. Fore wing with indistinct oblique antemedial and medial lines, the former with pale inner edge; a postmedial line, with pale outer edge, angled beyond the cell; a submarginal series of indistinct dark specks. Hind wing reddish fuscous, with fine marginal ochreous line.

Hab. Pareshnáth, Bengal; Ganjam. *Exp.* 30 millim.

2548. **Borsippa megastigmata**, n. sp.

♀. Ochreous brown, with the tips of the scales dark rufous; palpi blackish at base. Fore wing with oblique antemedial ochreous line; the orbicular and reniform very large, with ochreous outline; a postmedial ochreous line, highly angled beyond cell, with a subtriangular dark chocolate patch on the costa beyond it; some specimens with some chocolate submarginal spots towards inner margin; a marginal series of minute specks. Hind wing golden-fuscous.

Hab. Sikhim (*Möller*); Nágas (*Doherty*). *Exp.* 40 millim. Type in coll. Elwes.

Genus **PLECOPTERA.**

Plecoptera, *Guen. Noct.* ii, p. 429 (1852).

Type, *P. reflexa*, Guen.

Range. Ethiopian and Oriental regions.

Palpi slight and reaching vertex of head, the 3rd joint minute; antennæ of male with long cilia and bristles; thorax and abdomen smoothly scaled; tibiæ slightly hairy and without spines. Fore wing with the apex nearly rectangular.

SECT. I. Hind wing of male with vein 1 *b* fringed with hair; the inner area developed into a very large lobe, turned over on surface of wing and containing a small tuft of hair at base.

2549. **Plecoptera reflexa**, *Guen. Noct.* ii, p. 430; *C. & S.* no. 2312.
Trigonodes gammoides, *Wlk. Cat.* xv, p. 1833.
Poaphila simplex, *Wlk. Cat.* xv, p. 1840.
Poaphila hamifera, *Wlk. Cat.* xxxiii, p. 992.
Poaphila uniformis, *Moore, Lep. Atk.* p. 172, pl. 5, fig. 10; *C. & S.* no. 2313.

Grey-brown; the head and collar bright fulvous. Fore wing with obliquely waved antemedial line; a large reniform spot, often with black centre and with a rufous spot on the costa above it; an inwardly-oblique waved postmedial line and sinuous submarginal line; a marginal series of minute dark specks. Hind wing fuscous brown; the outer area slightly darker. Underside greyish white; the outer area fuscous; male with the costal area of hind wing also fuscous.

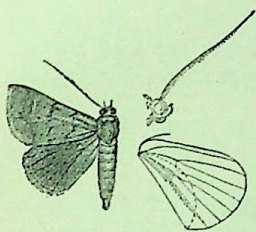



Fig. 291.
Plecoptera reflexa, ♂. ½.

Uniformis is a slightly marked pale form.

Hab. Throughout N. India; Poona; Andamans. *Exp.* 30 millim.

SECT. II. Male with a tuft of long hair from femoro-tibial joint of mid legs; no fold to hind wing.

2550. **Plecoptera resistens**, *Wlk. Cat.* xv, p. 1749.
Poaphila oculata, *Moore, Lep. Atk.* p. 172, pl. 5, fig. 11; *C. & S.* no. 2309.
Poaphila reversa, *Wlk. Cat.* xxxiii, p. 991.
Heliothis juncea, *Swinh. P. Z. S.* 1885, p. 448, pl. 27, fig. 4; *C. & S.* no. 1733.
Remigia quæsita, *Swinh. P. Z. S.* 1885, p. 468, pl. 27, fig. 8; *C. & S.* no. 2705.

♀. Differs from *reflexa* in the thorax and fore wing being suffused with ochreous or yellowish. Fore wing with the reniform large and dark, the centre suffused with grey; the outer area sometimes suffused with bright yellow. Hind wing with the basal area paler, contrasting with the dark outer area; some specimens with traces of a postmedial line.

♂. Head and collar yellow; thorax and abdomen fuscous black. Fore wing dark red-brown, with the reniform in the shape of a deep black lunule; ante- and postmedial spots on costa. Hind wing and underside darker.

Hab. Congo; Bhután; Bombay; Nilgiris. *Exp.* 32 millim.

2551. **Plecoptera luteiceps,** *Wlk. Cat.* xxxiii, p. 992; *C. & S.* no. 2307.
Poaphila quadrilineata, *Moore, Lep. Atk.* p. 172, pl. 5, fig. 22; *C. & S.* no. 2311.

Head, collar, and tibiæ orange-fulvous; thorax and abdomen brownish fuscous. Fore wing brownish fuscous suffused with purplish; a straight erect antemedial line; a postmedial line, angled below costa; an indistinct fuscous reniform stigma; a highly sinuous submarginal line. Hind wing dark fuscous; cilia of both wings pale brown.

Hab. Sikhim; Khásis. *Exp.* 36 millim.

2552. **Plecoptera erica,** *Swinh. Trans. Ent. Soc.* 1891, p. 149, pl. 8, fig. 15.

Differs from *luteiceps* in the reniform being replaced by two specks; the postmedial line absent; a straight submarginal rufous line, with indistinct fuscous line beyond it.

Hab. Shanghai; Bombay; Java. *Exp.* 40 millim.

Genus ACANTHOLIPES.

Acantholipes, *Led. Noct. Eur.* p. 198 (1857).
Gesonia, *Wlk. Cat.* xvi, p. 75 (1858).
Oglasa, *Wlk. Cat.* xvi, p. 194.
Dragana, *Wlk. Cat.* xvi, p. 200.
Hileia, *Wlk. Cat.* xxiv, p. 1100 (1862).
Apphadana, *Wlk. Cat.* xxxiv, p. 1212 (1865).
Docela, *Wlk. Cat.* xxxiv, p. 1258.
Hemipsectra, *Hmpsn. Ill. Het.* viii, p. 84 (1891).

Type, *A. regularis*, Hübn. from Europe.

Range. Europe; Africa; Formosa; throughout India and Ceylon; E. Pegu; Andamans.

Palpi obliquely upturned, the 2nd joint very broadly fringed with hair, the 3rd minute; thorax and abdomen smoothly scaled and slender; tibiæ without spines and not fringed with long hair. Fore wing with the apex quadrate or slightly acute.

SECT. I. (*Acantholipes*). Antennæ of male minutely ciliated.

A. *Wings moderately broad.*

2553. **Acantholipes circumdatus,** *Wlk. Cat.* xv, p. 1763.
Acantholipes flavisigna, *Moore, P. Z. S.* 1881, p. 371; *C. & S.* no. 2692.
Acantholipes nigrisigna, *Moore, P. Z. S.* 1881, p. 372; *C. & S.* no. 2694.
Docela vetustalis, *Wlk. Cat.* xxxiv, p. 1258.
Docela affinis, *Butl. A. M. N. H.* (5) v, p. 225; *C. & S.* no. 2691.

Pale ochreous brown. Fore wing with a black lunule at end of cell; the outer half of wing clouded with fuscous, especially a patch below the end of the cell and three patches beyond the

almost straight oblique yellow band from the apex; cilia white at apex. Hind wing with an antemedial fuscous band; a medial yellow band not reaching the costa and varying in breadth; the outer area fuscous; a leaden-grey patch at anal angle.

Hab. W. and S. Africa; N.W. and W. India. *Exp.* 24–28 millim.

2554. **Acantholipes trajectus**, *Wlk. Cat.* xxxiii, p. 986.
Acantholipes trifasciata, *Moore, Lep. Ceyl.* iii, p. 187, pl. 172, fig. 2; *C. & S.* no. 2696.
Acantholipes inconspicua, *Butl. P. Z. S.* 1880, p. 677.

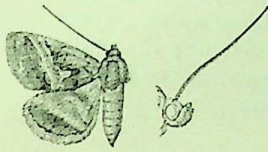



Fig. 292.
Acantholipes trajectus, ♂. ½.

Differs from *circumdata* in being dark leaden-grey. Fore wing with an oblique antemedial line from the cell to inner margin; the band from apex red-brown. Hind wing with the medial band red-brown and narrow.

Hab. Formosa; W. India; Nilgiris; Ceylon. *Exp.* 28 millim.

*2555. **Acantholipes hypenoides**, *Moore, P. Z. S.* 1881, p. 372; *C. & S.* no. 2693.

Greyish ochreous brown. Fore wing thickly irrorated with brown; a medial blackish-brown band from median nervure to inner margin, bordered outwardly by a slender ochreous line, angled below the costa; a waved dark fascia below apex; some pale specks on costa towards apex; a pale line on outer margin below apex. Hind wing paler.

Hab. Sikhim. *Exp.* 22–25 millim.

2556. **Acantholipes fasciatus**, *Hmpsn. Ill. Het.* viii, p. 82, pl. 146, fig. 8.

Purplish grey; the palpi black, the basal joint white. Fore wing with indistinct waved antemedial line; a black lunule at end of cell; a double, oblique, irregularly waved, antemedial line; a sinuous chestnut postmedial line, with black maculate edges, and a line beyond it; a marginal series of black specks. Hind wing with double postmedial line, not reaching the costa, and a marginal lunulate line.

Hab. Nilgiris. *Exp.* 32 millim.

2557. **Acantholipes similis**, *Moore, Lep. Atk.* p. 174, pl. 6, fig. 5; *C. & S.* no. 2325.
Phurys ochreifascia, *Hmpsn. Ill. Het.* viii, p. 83, pl. 146, fig. 2.
Phurys leucopos, *Hmpsn. Ill. Het.* viii, p. 83, pl. 146, fig. 10.

♂. Ochreous brown; the palpi, pectus, and fore legs chestnut, the last with the tibiæ white-fringed and the tarsi white. Fore wing with two antemedial and two medial indistinct dark lines; a postmedial oblique diffused line, with black specks on it towards inner margin, and a slight waved line beyond it; a marginal series

of specks. Hind wing with two antemedial lines; a medial outwardly diffused line and submarginal line; a series of marginal specks.

♀ paler; the palpi and pectus but slightly chestnut-coloured; the fore legs brown. Wings with the lines more prominent; the fore wing with an ochreous line inside the postmedial oblique line.

Hab. Sikhim; Nilgiris. *Exp.*, ♂ 28, ♀ 30 millim.

2558. **Acantholipes notatus,** *Hmpsn. Ill. Het.* viii, p. 84, pl. 146, fig. 3.

♂. Differs from *similis* in the palpi and pectus being black; the fore legs black, with the tibiæ and tarsi white. Fore wing with the lines very indistinct and more oblique; the postmedial line with a black subapical spot and a speck above it, a similar spot with a speck below it towards inner margin.

♀ paler.

Hab. Nilgiris. *Exp.* 28 millim.

2559. **Acantholipes inscitius,** *Swinh. P. Z. S.* 1885, p. 473; *C. & S.* no. 3035.

Differs from *notatus* in the fore wing having a black spot at centre of cell and a black lunule at end of it.

Hab. Bombay; Poona. *Exp.* 24 millim.

2560. **Acantholipes miser,** *Butl. P. Z. S.* 1883, p. 166; *C. & S.* no. 2944.

Purple-grey. Fore wing with traces of two antemedial and one medial waved line from median nervure to inner margin; a black lunule on discocellulars; a rufous-brown submarginal sinuous band; a marginal series of dark specks. Hind wing with traces of medial and postmedial lines.

Hab. Simla; Mhow; Asirgarh. *Exp.* 22 millim.

*2561. **Acantholipes fasciosus,** *Moore, Lep. Atk.* p. 174, pl. 6, fig. 6; *C. & S.* no. 2323.

♀. Differs from *similis* in being greyer. Fore wing with six indistinct lines between the base and postmedial line; hind wing with eight indistinct lines.

Hab. Sikhim. *Exp.* 45 millim.

2562. **Acantholipes dissimilis,** *Moore, Lep. Atk.* p. 174; *C. & S.* no. 2322.

Differs from *similis* in the fore wing having the markings indistinct, except the oblique ochreous dark-bordered line from apex. Hind wing with the markings indistinct, except the submarginal diffused fuscous band, which is bent outwards towards the apex, but does not reach it. Underside yellower, with diffused fuscous submarginal oblique bands.

Hab. N.W. Himalayas. *Exp.* 34 millim.

B. *Wings considerably broader; the build stouter.*

2563. **Acantholipes trifasciatus**, *Moore, P. Z. S.* 1877, p. 612; *Moore, Lep. Ceyl.* iii, pl. 174, fig. 12; *C. & S.* no. 2784.
Capnodes stellata, *Moore, P. Z. S.* 1883, p. 28; *C. & S.* no. 2782.
Capnodes pallens, *Moore, Lep. Atk.* p. 176, pl. 5, fig. 21; *C. & S.* no. 2780.

Yellowish brown, liver-colour, or dark red. Fore wing with indistinct waved antemedial and postmedial lines with series of white specks on them; traces of medial and submarginal sinuous lines; two dark specks at end of cell; a marginal series of specks. Hind wing with indistinct ante- and postmedial lines with series of white specks on them; a marginal series of dark specks.

Hab. Dharmsála; Campbellpur; Ceylon; Nágas; Andamans. *Exp.* 36–40 millim.

SECT. II. (*Oglasa*). Antennæ of male with long cilia and bristles.

2564. **Acantholipes lagusalis**, *Wlk. Cat.* xvi, p. 194.

Brownish ochreous; palpi dark at sides. Fore wing with dark subbasal, antemedial, and medial patches on the costa; a black streak at lower angle of cell; traces of curved antemedial and postmedial series of specks and a marginal series. Underside of hind wing with cell-spot and postmedial line.

In the Ganjam specimen there is a dark lunulate subapical mark on outer margin of fore wing below the apex.

Hab. Ganjam; Nágas; Borneo. *Exp.* 24–28 millim.

SECT. III. (*Gesonia*). Antennæ of male serrate and fasciculated.

2565. **Acantholipes obeditalis**, *Wlk. Cat.* xvi, p. 75; *C. & S.* no. 2826.
Hileia crambisata, *Wlk. Cat.* xxiv, p. 1100; *C. & S.* no. 3689.
Apphadana festina, *Swinh. P. Z. S.* 1885, p. 475, pl. 28, fig. 3; *C. & S.* no. 2943.
Apphadana nigrofusca, *Swinh. P. Z. S.* 1885, p. 475, pl. 28, fig. 4; *C. & S.* no. 2945.
Apphadana rubicundula, *Swinh. P. Z. S.* 1885, p. 475, pl. 28, fig. 2; *C. & S.* no. 2946.
Apphadana rusticula, *Swinh. P. Z. S.* 1885, p. 474, pl. 28, fig. 1; *C. & S.* no. 2947.

Fuscous or rufous brown; palpi chocolate at sides. Fore wing with traces of ante- and postmedial waved lines, the latter incurved below cell; traces of specks in and at end of cell; an obliquely sinuous postmedial pale line, with rufous diffused on its outer edge; a marginal series of dark specks. Hind wing with post-medial line developed towards inner margin; a marginal series of dark specks; traces of medial and submarginal lines.

Some specimens have a dark spot beyond the postmedial line of

fore wing at middle, and another above inner margin; *rubicundula* has the ground-colour of fore wing ochreous as far as the submarginal line, and *nigrofusca* has the colour between the ante- and postmedial lines fuscous black.

Hab. Bombay; Poona; Nilgiris; Ceylon. *Exp.* 22–24 millim.

2566. **Acantholipes gemma,** *Swinh. P. Z. S.* 1885, p. 469; *C. & S.* no. 2825.

♀. Brownish ochreous. Fore wing with the outer half suffused with fuscous brown; an obscure antemedial line; an orange-yellow spot on discocellulars; waved postmedial and submarginal lines, the latter diffused inwards.

Hab. Poona. *Exp.* 20 millim.

SECT. IV. (*Hemipsectra*). Antennæ of male pectinated to middle on the outer side, with bristles on the inner side.

2567. **Acantholipes plumipars,** *Hmpsn. Ill. Het.* viii, p. 84, pl. 147, fig. 23.

♂. Pale brown, with a slight reddish tinge; palpi black at sides. Fore wing with two black specks at base, the upper one on the costa; an antemedial interrupted curved line arising from a black speck on the costa; a similar postmedial line excurved from the costa to below vein 2; a marginal series of specks.

The specimen from Ganjam has a chestnut tinge.

Hab. Ganjam; Nilgiris. *Exp.* 24–30 millim.

SECT. V. (*Dragana*). Antennæ of male bipectinated, the branches short.

2568. **Acantholipes pansalis,** *Wlk. Cat.* xvi, p. 200; *Hmpsn. Ill. Het.* ix, pl. 167, fig. 3; *C. &. S.* no. 2941.
Apphadana evulsalis, *Wlk. Cat.* xxxiv, p. 1213.
Poaphila concors, *Wlk. Cat.* xxxv, p. 1969.

Ochreous or reddish brown. Fore wing slightly irrorated with black scales; very indistinct antemedial, two waved medial, and more prominent postmedial line, with the area beyond it darker and often with obscure fuscous patches beyond it at centre and inner margin; a marginal series of black specks. Hind wing with sinuous postmedial line; the area beyond it darker and with traces of a submarginal line.

Hab. Formosa; throughout India, Ceylon, and Burma; Andamans; Singapore. *Exp.*, ♂ 22, ♀ 24 millim.

2569. **Acantholipes fuscicosta,** *Hmpsn. Ill. Het.* viii, p. 101, pl. 148, fig. 15.

Pale reddish brown; the head and collar smoky black. Fore wing with the costa black; an antemedial line; a speck at end of cell; the outer area suffused with fuscous, with waved postmedial

and submarginal lines; a series of marginal black specks. Hind wing with antemedial line; the outer area suffused with fuscous, with postmedial and submarginal waved lines; a marginal series of black specks.

Hab. Nilgiris; Ceylon; E. Pegu. *Exp.* 18–22 millim.

SECT. VI. Antennæ of male bipectinated, the branches long.

2570. **Acantholipes bilineatus**, n. sp.

♂. Dark red-brown. Fore wing with straight dark ante- and postmedial erect lines; a dark marginal line. Hind wing fuscous brown, with fine marginal line. Underside of both wings with dark postmedial line.

♀ with the hind wing greyish.

Hab. Sikhim (*Elwes*); Nágas (*Doherty*). *Exp.*, ♂ 28, ♀ 24 millim. Type in coll. Elwes.

Genus **REMIGIA**.

Remigia, *Guen. Noct.* iii, p. 312 (1852).
Cauninda, *Moore, Lep. Ceyl.* iii, p. 190 (1884).

Type, *R. frugalis*, Fabr.

Range. Universally distributed except in the Palæarctic region, where it is found in Siberia and Japan.

Palpi upturned, reaching above vertex of head, the 2nd joint thickly scaled, the 3rd prominent; antennæ of male ciliated, with bristles to the joints; thorax and abdomen smoothly scaled; mid tibiæ spined.

Larvæ with two pairs of abdominal prolegs.

SECT. I. Male with the mid and hind tibiæ clothed with short hair.

2571. **Remigia discios**, *Koll. Hügel's Kaschmir*, iv, p. 477; *C. & S.* no. 2701.

Dark grey. Fore wing with a short subbasal fine line; an antemedial dark brown band, very broad towards inner margin, where it is bounded by the recurved portion of the postmedial line; a slight line on the discocellulars and a triangular spot beyond them; a straight postmedial line, with its outer edge diffused to the indistinct dentate submarginal line; a waved marginal line. Hind wing brownish fuscous, with indistinct medial line; the outer area darker.

Hab. N.W. Himalayas. *Exp.* 50 millim.

2572. **Remigia laxa**, *Wlk. Cat.* xiv, p. 1486.
Remigia pavona, *Feld. Reis. Nov.* pl. 117, fig. 9; *C. & S.* no. 2704.

Differs from *discios* in being much redder brown. Fore wing with the dark band beyond the antemedial line much broader

extending to the end of cell and getting wider towards inner margin; the dark suffusion beyond the reniform slight.

Hab. Sikhim. *Exp.* 44–48 millim.

SECT. II. (*Cauninda*). Male with the mid and hind tibiæ clothed with long hair.

2573. **Remigia archesia**, *Cram. Pap. Exot.* iii, pl. 273, F, G; *Moore, Lep. Ceyl.* iii, pl. 172. figs. 3, 3 *a* (larva); *C. & S.* no. 2697.
Phalæna virbia, *Cram. Pap. Exot.* iii, pl. 273, H.
Remigia gregalis, *Guen. Noct.* iii, p. 320; *C. & S.* no. 2703.
Remigia pellita, *Guen. Noct.* iii, p. 319.
Remigia jugalis, *Wlk. Cat.* xiv, p. 1505.
Remigia mutuata, *Wlk. Cat.* xiv, p. 1505.
Hypætra defundens, *Wlk. Cat.* xxxiii, p. 963.
Remigia associata, *Wlk. Cat.* xxxiii, p. 1010.
Remigia inconsisa, *Wlk. Cat.* xxxiii, p. 1013.
Remigia bifasciata, *Wlk. Cat.* xxxiii, p. 1014.
Ophiusa mayeri, *Boisd. Faun. Ent. Madag., Lép.* p. 104.

Pale red-brown; abdomen pale fuscous, the anal tuft ochreous. Fore wing with a short subbasal red-brown line; an oblique antemedial pale or ochreous line, with diffused red-brown band on its outer edge; a sinuous medial line angled on median nervure; the reniform large and indistinct; a red-brown diffused postmedial band, on which is a dark line slightly excurved beyond the cell,

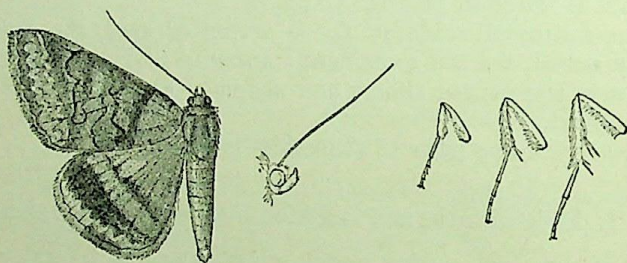



Fig. 293.—*Remigia archesia*, ♂. ½.

and at vein 2 very irregularly recurved to lower angle of cell, then descending to inner margin; an indistinct pale waved submarginal line, with a series of black specks on it; a dark waved marginal line. Hind wing ochreous fuscous, with narrow fuscous medial band and diffused submarginal band. Legs rufous.

Some specimens have a black spot on the fore wing above the inner margin before the middle; the variety *gregalis* is duller in colour, with the markings of the fore wing obsolescent.

Larva purplish brown speckled with black; the lateral area yellowish with red lines; a sublateral row of small black dots; head with a brown and red lateral streak. Food-plant, *Desmodium*. Pupa efflorescent.

Hab. Ethiopian and Oriental regions; N. China. *Exp.* 42–54 millim.

SECT. III. (*Remigia*). Male with the hind tibiæ and tarsi clothed with long thick pile.

2574. **Remigia frugalis**, *Fabr. Syst. Ent.* vi, p. 601; *Moore, Lep. Ceyl.* iii, pl. 172, figs. 4, 4 *a* (larva); *C. & S.* no. 2702.
Remigia translata, *Wlk. Cat.* xxxiii, p. 1015.
Chalciope lycopodia, *Geyer, Hübn. Zutr.* v, 25, figs. 897, 898.

Grey-brown. Fore wing with a diffused dark mark above the centre of vein 1; an oblique postmedial line pale inwardly, red-brown outwardly; a submarginal series of black specks. Hind wing with postmedial and diffused submarginal lines.

Some specimens have a black spot above inner margin of fore wing before the middle.

Larva pale yellowish ochreous, with darker lines; two subdorsal lines; and a sublateral series of olivaceous spots; 4th and 5th somites edged behind with black. Food-plants, *Zingiberaceæ*.

Had. W. Africa and throughout the Oriental and Australian regions. *Exp.* 36–50 millim.

Genus TRIGONODES.

Trigonodes, *Guen. Noct.* iii, p. 281 (1852).
Chalciope, *Hübn. Verz.* p. 268 (1818) non descr.
Attatha, *Moore, P. Z. S.* 1878, p. 847.

Type, *T. hyppasia*, Cram.

Range. Ethiopian, Oriental, and Australian regions.

Palpi upturned, reaching just above vertex of head, the 2nd joint roughly scaled, the 3rd prominent; thorax and abdomen smoothly scaled and slender; mid and hind tibiæ spined. Fore wing with the apex somewhat produced.

Larvæ with two pairs of abdominal prolegs.

SECT. I. (*Trigonodes*). Male with the antennæ ciliated; mid and hind tibiæ fringed with hair.

2575. **Trigonodes hyppasia**, *Cram. Pap. Exot.* iii, pl. 250, E; *C. & S.* no. 2687.
Phalæna deliana, *Stoll, Cram. Pap. Exot.* v, p. 160, pl. 36, fig. 4.
Ophiusa anfractuosa, *Boisd. Faun. Ent. Madag., Lép.* p. 104, pl. 15, fig. 6.
Trigonodes inacuta, *Guen. Noct.* iii, p. 284.
Trigonodes exportata, *Guen. Noct.* iii, p. 284.
Trigonodes acutata, *Guen. Noct.* iii, p. 283.
Trigonodes compar, *Wlk. Cat.* xiv, p. 1451.
Chalciope deltifera, *Feld. Reis. Nov.* pl. 117, fig. 24.
Chalciope mahura, *Feld. Reis. Nov.* pl. 117, fig. 13.

Pale ochreous brown, slightly suffused with fuscous or dark grey-brown. Fore wing with a large black white-edged triangular patch below the cell from near base to towards outer angle; a similar smaller patch beyond the cell on vein 5, with some pale

fulvous beyond it; a slightly sinuous submarginal pale line, with patches of black suffusion inside it and a series of black specks beyond it; a dark marginal line. Hind wing with indistinct medial line; the outer area suffused with fuscous.

Hab. Africa; Mauritius; Madagascar; Aden; China; Formosa; throughout India, Ceylon, and Burma; Java; Australasia. *Exp.* 46 millim.

2576. **Trigonodes cephise,** *Cram. Pap. Exot.* iii, pl. 227, C; *C. & S.* no. 2685.
Trigonodes maxima, *Guen. Noct.* iii, p. 282; *C. & S.* no. 2688.

♂. Differs from *hyppasia* in the basal triangle of the fore wing extending to nearer the outer angle; the outer triangle much larger and extending to the submarginal line, which is evenly curved. Hind wing with the basal area suffused with fuscous; no medial line; the outer suffusion forming an ill-defined band.

♀ much yellower; fore wing with the outer triangular patch broken up into a streak above vein 5, and a lunulate patch on the submarginal line.

Hab. Moulmein; Rangoon; Fiji. *Exp.* 54–66 millim.

SECT. II. Male with the antennæ expanding into a scale-clothed bulb just before the middle, and bipectinated from there to apex; tibiæ not fringed with hair.

2577. **Trigonodes disjuncta,** *Moore, Lep. Atk.* p. 171; *C. & S.* no. 2686.

Differs from *hyppasia* in the basal triangular patch of the fore wing having its apex truncate, and being more produced towards

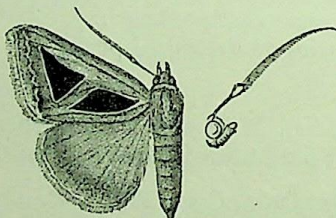



Fig. 294.—*Trigonodes disjuncta*, ♂. ½.

outer angle; the submarginal line waved. Hind wing uniform fuscous.

Hab. Bombay; Nilgiris. *Exp.* 45 millim.

SECT. III. (*Attatha*). Male with the antennæ almost simple; tibiæ not fringed with hair.

2578. **Trigonodes regalis,** *Moore, P. Z. S.* 1872, p. 575, pl. 33, fig. 7; *C. & S.* no. 807.

♂. Head and thorax whitish; the frons, a band on thorax, and

stripe on metathorax black-brown; abdomen, palpi, pectus, and legs crimson, the legs striped with black. Fore wing white; a black-brown stripe below the cell from base; a narrower stripe on inner margin; an oblique medial band from middle of costa to near outer angle, widest at the costa, and with a line beyond it from below the costa to vein 2, where it is recurved; a large triangular patch from costa at apex to above outer angle; a marginal line terminating at vein 3; the outer angle crimson, with three black spots on it. Hind wing crimson, with a submarginal series of black spots.

Hab. N. India; Canara; Ceylon; Tenasserim. *Exp.* 48 millim.

2579. **Trigonodes ino,** *Drury, Ill. Exot. Ins.* iii, p. 39, pl. 29, fig. 3; *C. & S.* no. 635.

Noctua notata, *Fabr. Ent. Syst.* iii, 2, p. 39; *C. & S.* no. 2680.
Grammodes mundicolor, *Wlk. Cat.* xxxiii, p. 973.

Differs from *regalis* in the oblique band of the fore wing being quadrate from the costa to median nervure, where its outer edge is angled; the apical triangular patch wider, so as to extend close to the postmedial line and the margin. Hind wing with a triangular patch from the apex to near anal angle, inside the submarginal series of spots.

Hab. Sikhim; Nepal; Madras. *Exp.* 38 millim.

2580. **Trigonodes tetraspila,** *Wlk. Cat.* xxxiii, p. 1076; *Hmpsn. Ill. Het.* ix, pl. 166, fig. 2.

♀. Bright ochreous yellow; the collar black. Fore wing slightly irrorated with fuscous; a black band from costa to lower angle of cell; a large apical black spot. Hind wing yellow, with apical black spot.

Hab. Ceylon. *Exp.* 36 millim.

Genus **FODINA.**

Fodina, *Guen. Noct.* iii, p. 274 (1852).

Type, *F. oriolus*, Guen.

Range. Ethiopian, Oriental, and Australian regions.

Palpi upturned, with the 2nd joint reaching vertex of head, the 3rd long; antennæ of male with bristles to the joints; thorax and abdomen smoothly scaled; tibiæ without spines, and not fringed with hair in male. Fore wing with the apex quadrate.

2581. **Fodina oriolus,** *Guen. Noct.* iii, p. 274; *C. & S.* no. 2681.

Head and thorax black; shaft of antennæ and a band between their bases white; abdomen orange. Fore wing black, with a broad oblique medial white band; the outer margin and cilia grey. Hind wing orange; the apical area black; an elongate black patch near anal angle and black streak at anal angle.

Hab. Sikhim; Sylhet. *Exp.* 48 millim.

2582. **Fodina pallula,** *Guen. Noct.* iii, p. 275; *C. & S.* no. 2682.

Differs from *oriolus* in the base of the hind wing being fuscous black and joined to the patch near anal angle.

Hab. N.W. Himalayas; Assam; Calcutta; Ceylon. *Exp.* 42 millim.

2583. **Fodina stola,** *Guen. Noct.* iii, p. 275; *C. & S.* no. 2683.
Fodina postmaculata, *Hmpsn. Ill. Het.* ix, p. 113, pl. 165, fig. 5.

Head and thorax bright red-brown; collar and metathorax banded with whitish; abdomen orange. Fore wing with the basal part of costa purplish; a large irregular red-brown patch on basal half of wing, with ochreous edges and running out to an angle on vein 2; the area between it and the large red-brown patch occupying the apical area, and extending nearly to outer angle, ochreous; an ochreous marginal line; the cilia grey. Hind wing orange, with the apical area fuscous black; traces of a fuscous patch near anal angle. Underside orange, with dark medial patch to fore wing and apical patches to both wings.

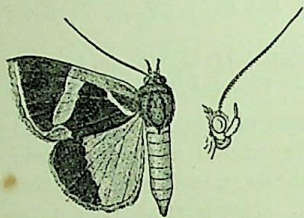



Fig. 295.—*Fodina stola*, ♂. ½.

The Ceylonese form *postmaculata* is smaller, with the band of the fore wing between the red-brown patches narrower and whiter; hind wing with the black patch at anal angle large; underside more uniform orange.

Hab. N.W. Himalayas; Sikhim; Bhután; Moulmein; Ceylon. *Exp.* 36–46 millim.

2584. **Fodina cuneigera,** *Butl. Ill. Het.* vii, p. 79, pl. 132, fig. 5.

Head and collar chestnut, the latter with a white band; thorax black; abdomen ochreous fuscous. Fore wing ochreous brown, suffused with fuscous; the costa purplish; a large, black, white-edged, triangular basal patch; a smaller triangular purplish-black patch on costa before apex. Hind wing brownish ochreous suffused with fuscous; the apical area fuscous.

Hab. Kángra; Ganjam; Nilgiris. *Exp.* 40 millim.

2585. **Fodina juncta,** n. sp.

♂. Head and thorax dark brown; a pale band on metathorax; abdomen fuscous. Fore wing with the base brown, followed by an oblique white band; a large irregular dark brown patch with white edges on medial area, joined to a quadrate apical patch, and having the medial costal area and area near outer angle pale brown; a black speck at end of cell. Hind wing dark fuscous.

Hab. Sikhim (*Dudgeon*). *Exp.* 26 millim. Type in coll. Moore.

Genus GRAMMODES.

Grammodes, *Guen. Noct.* iii, p. 275 (1852).
Colbusa, *Wlk. Cat.* xxxiii, p. 978 (1865).

Type, *G. geometrica*, Fabr.

Range. W. Africa; China; Formosa; throughout India, Ceylon, and Burma; Java; Borneo; Australia; Fiji.

Palpi upturned, reaching just above vertex of head, the 3rd joint minute; antennæ almost simple in male; thorax and abdomen smoothly scaled and somewhat slender; tibiæ clothed with rather long hair, the mid tibiæ spined. Fore wing short and broad, the apex somewhat acute.

Larvæ with 3 pairs of abdominal prolegs.

2586. **Grammodes mygdon,** *Cram. Pap. Exot.* ii, pl. 156, G; *C. & S.* no. 2678.

Chalciope mygdonias, *Hübn. Verz.* p. 268.

Head and thorax dark red-brown; abdomen greyish fuscous. Fore wing purplish grey; the costa ochreous; a large red-brown patch occupying the whole wing except the costal and outer areas, and crossed by an oblique ochreous band, its costal and outer edges bordered by reddish ochreous, their angle almost joined by a red-brown streak from the apex; a submarginal series of specks. Hind wing fuscous; the cilia grey below apex and at outer angle.

Hab. China; Formosa; throughout India, Ceylon, and Burma; Java; Borneo. *Exp.* 36–40 millim.

2587. **Grammodes geometrica,** *Fabr. Syst. Ent.* p. 599.

Phalæna ammonia, *Cram. Pap. Exot.* iii, pl. 250, D; *C. & S.* no. 2676.
Noctua bifasciata, *Petag. Sp. Ins.* p. 38, fig. 26.
Noctua linearis, *Hübn. Beitr.* ii, p. 26 T.
Noctua parellaris, *Hübn. Noct.* pl. 66, fig. 324.
Noctua chalciptera, *Borkh. Schmett. Eur.* iv, p. 771.
Grammodes congenita, *Wlk. Cat.* xiv, p. 1443.

Grey-brown. Fore wing with a large black patch occupying the whole wing except the basal, costal, and outer areas, its outer edge waved and joined by an oblique streak from the apex; ante- and postmedial lines recurved below the costa, with whitish bands outside them on the black patch; the outer part of the postmedial band pale fulvous. Hind wing fuscous, with medial pale band; the cilia white at apex and anal angle.

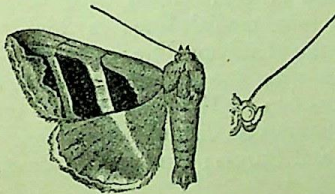



Fig. 296.
Grammodes geometrica, ♂. ½.

Hab. Europe; Africa; Formosa; throughout India and Ceylon; Java; Australia. *Exp.* 26 (dwarf) to 45 millim.

2588. **Grammodes stolida**, *Fabr. Syst. Ent.* p. 599; *C. & S.* no. 2679.
Noctua cingularis, *Hübn. Noct.* pl. 76, fig. 352.

Differs from *geometrica* in being greyer. Fore wing with the inner edge of the postmedial line bent inwards at middle; a white marginal line; cilia white at apex. Hind wing with the band white; a round white submarginal spot near anal angle.

Hab. Europe; Africa; Aden; throughout N.W. and Peninsular India. *Exp.* 30–40 millim.

Genus ENTOMOGRAMMA.

Entomogramma, *Guen. Noct.* iii, p. 203 (1852).
Taramina, *Moore, Lep. Ceyl.* iii, p. 153 (1884).

Type, *E. fautrix*, Guen.

Range. Africa; Japan; throughout India, Ceylon, and Burma; Andamans.

Palpi with the 2nd joint thickened and reaching vertex of head, the 3rd of moderate length; thorax and abdomen smoothly scaled; fore tibiæ of male fringed with long hair; mid and hind tibiæ moderately hairy; mid tibiæ spined. Fore wing short and broad; the costa arched towards apex; the outer margin excurved at centre.

Sect. I. (*Entomogramma*). Antennæ of male ciliated and without a ridge of scales near base.

A. *Palpi with 3rd joint somewhat short.*

2589. **Entomogramma fautrix**, *Guen. Noct.* iii, p. 204; *Feld. Reis. Nov.* pl. 115, fig. 5; *C. & S.* no. 2548.

Fuscous brown; the head blackish; the collar fulvous. Fore wing with a fulvous and dark streak below subcostal nervure from the base to the apex; the basal part of costa purplish; antemedial and medial nearly straight lines angled below the costa; an irregularly waved postmedial line angled below costa and near inner margin, followed by a straight fulvous line and a submarginal waved line; a black spot at end of cell. Hind wing with indistinct antemedial line; a straight medial line; a highly dentate postmedial followed by a straight fulvous line; a submarginal series of specks; both wings with fine marginal ochreous line. Underside suffused with fuscous, with some orange on costal and outer areas, and orange lunules on disk of both wings.

Hab. Throughout India, Ceylon, and Burma; Andamans; Java. *Exp.* 60 millim.

2590. **Entomogramma mediocre**, *Wlk. Cat.* xxxiii, p. 949.
Remigia decora, *Wlk. Cat.* xxxiii, p. 1015; *C. & S.* no. 2547.
Remigia antica, *Wlk. Cat.* xxxiii, p. 1016; *C. & S.* no. 2546.

♂. Orange-yellow; head and collar chestnut; wings with a

few strigæ. Fore wing with indistinct antemedial line, angled below the costa; a dark lunule at end of cell; an indistinct postmedial line, highly angled beyond cell, and with a slightly waved line beyond it; a more prominent double submarginal straight line, angled below costa, where it is crossed by a fulvous streak from the apex. Hind wing with indistinct antemedial straight line and highly dentate medial line; a more prominent double submarginal straight line; both wings with fine ochreous marginal line. Underside brighter yellow; both wings with cell-spot and three series of brown spots on outer area.

♀ with the upperside of thorax, base of abdomen, and wings suffused with grey, and with the markings much more prominent.

Hab. Coimbatore; Nilgiris. *Exp.* 50 millim.

SECT. II. (*Taramina*). Male with the antennæ pectinated with uniseriate branches to two-thirds length, the basal part thickened by a ridge of thick scales above.

2591. **Entomogramma tortum**, *Guen. Noct.* iii, p. 204; *Moore, Lep. Ceyl.* iii, pl. 166, fig. 2; *C. & S.* no. 2550.
Entomogramma squamicornis, *Feld. Reis. Nov.* pl. 115, fig. 3.

Differs from *fautrix* in being reddish brown without the fuscous tinge. Fore wing with no fuscous below the fulvous subcostal streak; the spot at end of cell outlined with black; the postmedial line dentate. Underside not suffused with fuscous, so that the lunulate lines are prominent.

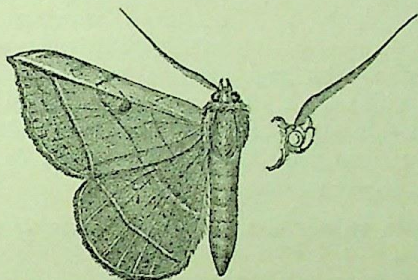



Fig. 297.—*Entomogramma tortum*, ♂. 1/1.

Hab. Throughout W. and S. India; Ceylon; Java. *Exp* 54 millim.

Genus THERMESIA.

Thermesia, *Hübn. Verz.* p. 270 (1818).
Azazia, *Wlk. Cat.* xv, p. 1576 (1858).
Hypospila, *Guen. Noct.* iii, p. 358 (1852).
Tochara, *Moore, Lep. Atk.* p. 175 (1882).
Blasticorhinus, *Butl. A. M. N. H.* (6) xii, p. 46 (1893).

Type, *T. gemmatalis*, Hübn., from America.
Range. Throughout the tropical and subtropical zones; Japan.

Palpi obliquely upturned, the 2nd joint reaching vertex of head; a sharp frontal tuft; thorax and abdomen smoothly scaled; tibiæ not spined and moderately hairy. Fore wing with the costa highly arched before the apex, which is acute.

Larvæ with 4 pairs of abdominal prolegs.

The typical section (Sect. I.) has a large tuft of hair on mid tibiæ and a small tuft at base of hind tibiæ.

Sect. II. Palpi with the 3rd joint rather shorter than in the typical section. Male with no tufts on tibiæ.

A. (Azazia). *Hind wing with normal neuration in male; no fold on inner margin.*

a. *Antennæ of male with bristles and cilia.*

2592. **Thermesia rubricans,** *Boisd. Faun. Ent. Madag., Lép.* p. 106, pl. 16, fig. 1; *C. & S.* no. 2815.
Thermesia transducta, *Wlk. Cat.* xxxiii, p. 1058.
Thermesia consueta, *Wlk. Char. Undescr. Lep. Het.* p. 93.

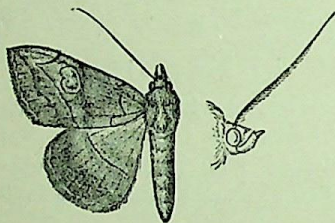



Fig. 298.
Thermesia rubricans, ♂. 1/1.

Rufous or grey-brown; palpi chestnut. Fore wing with indistinct subbasal curved line; a white speck in cell; the reniform very large, with two dark specks on it; a postmedial rufous line, very highly angled below the costa and joined by a dark apical streak; a submarginal series of dark specks; a rufous marginal line. Hind wing with rufous medial line, postmedial series of specks, and marginal rufous line. Underside much suffused with red; a white spot at end of cell, curved postmedial line and submarginal series of black and white lunules.

Hab. Africa; throughout the Indian region; Java and Pacific Islands. *Exp.* 40–46 millim.

2593. **Thermesia subcostalis,** *Wlk. Cat.* xxxiii, p. 1059; *C. & S.* no. 2774.

♀. Grey, irrorated with red-brown. Fore wing with a brown and fuscous fascia from base of inner margin to upper angle of cell, and thence to apex; an antemedial line from costa to subcostal nervure; nearly straight medial and postmedial lines, angled below the costa; a submarginal line, angled outwards at vein 3, then dentate to inner margin; an almost marginal series of black specks. Hind wing with speck at end of cell; a medial oblique line, joined at inner margin by a curved postmedial line; a dentate submarginal line; an almost marginal series of dark specks.

Hab. Moulmein. *Exp.* 40 millim.

2594. **Thermesia enervis,** *Swinh. Trans. Ent. Soc.* 1890, p. 231, pl. 8, fig. 8.

♀. Differs from *rivulosa* (p. 536) in being more uniformly brown;

both wings with the lines evenly and obliquely curved; a straight submarginal ochreous and fulvous line; a marginal series of dark specks.

Hab. Rangoon. *Exp.* 28 millim.

2595. **Thermesia oblita,** *Moore, Lep. Atk.* p. 176; *C. & S.* no. 2771.

Head black; thorax ochreous; abdomen fuscous. Fore wing ochreous, suffused with fuscous, except the apical costal area; six indistinct curved and waved lines; a black speck in cell and whitish spot at lower angle. Hind wing ochreous, suffused with fuscous; indistinct antemedial, medial, and postmedial waved lines, the medial line with some ochreous suffusion beyond it; a nearly straight submarginal line with ochreous beyond it. Underside ochreous, with fuscous lines and bands.

Hab. Pareshnáth; Khásis; Khyen Hills, Burma. *Exp.* 32 millim.

2596. **Thermesia arefacta,** *Swinh. P. Z. S.* 1884, p. 521, pl. 48, fig. 2 *C. & S.* no. 2698.

♂. Ochreous. Fore wing with traces of waved lines; both wings with a more prominent postmedial waved line, followed by a fuscous band and submarginal waved lines; a crenulate marginal line and series of specks on the veins.

Hab. Sind. *Exp.* 32 millim.

2597. **Thermesia obliqua,** *Moore, P. Z. S.* 1867, p. 80; *C. & S.* no. 2324.

♂. Ochreous suffused with rufous. Head and collar chestnut Fore wing with dark specks at centre and end of cell; an oblique pale antemedial band with dark edges from median nervure to inner margin; a line from apex to centre of inner margin, beyond which the area is rather darker, with an oblique ochreous line from below apex to inner margin; traces of two submarginal lines, and a marginal series of dark specks. Hind wing with dark speck in cell; an oblique pale medial line; traces of postmedial and submarginal lines and a marginal series of black specks.

♀ much browner and greyer.

Hab. Khásis. *Exp.* 36 millim.

2598. **Thermesia melanocephala,** *Hmpsn. Ill. Het.* viii, p. 82, pl. 146 fig. 9.

Poaphila marmorea, *Hmpsn. Ill. Het.* viii, p. 82, pl. 146, fig. 7.

Ochreous; the head black. Fore wing with indistinct waved subbasal, antemedial, medial, postmedial, and two submarginal lines, the postmedial line bent outwards beyond cell; a line on discocellulars. Hind wing with black speck at end of cell; waved medial line and submarginal series of black specks. Underside with prominent dentate postmedial and two submarginal bands to each wing.

The form *marmorea* is suffused with fuscous, and has the markings of upperside more prominent.

Hab. Nilgiris. *Exp.* 30–34 millim.

2599. **Thermesia mediorufa,** n. sp.

♀. Head and thorax reddish brown; abdomen fuscous. Fore wing brown, with a slight purplish suffusion; a small ferruginous patch on base of costa; the medial area ferruginous with dark edges, the outer edge incurved below the cell; a dark speck in cell and large indistinct reniform; an indistinct sinuous sub-marginal line and almost marginal series of minute specks; some white specks on costa towards apex. Hind wing brown, with two medial lines, the outer minutely dentate; an almost marginal series of minute specks.

Hab. Nágas (*Doherty*). *Exp.* 44 millim. Type in coll. Elwes.

b. *Antennæ of male bipectinated.*

2600. **Thermesia creberrima,** *Wlk. Cat.* xv, p. 1574; *Butl. Ill. Het.* vi, pl. 112, fig. 8; *C. & S.* no. 2769.
Iluza pyralina, *Moore, P. Z. S.* 1877, p. 610; *C. & S.* no. 2316.
Tochara obliqua, *Moore, Lep. Atk.* p. 175, pl. 6, fig. 27; *C. & S.* no. 2327.

Differs from *bolinoides* in being yellow-brown.

Hab. Sylhet; Andamans. *Exp.* 42 millim.

B. (Blasticorhinus). *Hind wing of male with normal neuration; a large vesicular fold on base of inner margin, with a tuft of long hair attached to it.*

a. *The apex of the vesicular fold truncate.*

2601. **Thermesia rivulosa,** *Wlk. Cat.* xxxiii, p. 1060; *Moore, Lep. Ceyl.* iii, pl. 174, fig. 5; *C. & S.* no. 2766.

♀. Reddish grey-brown. Fore wing with antemedial sinuous line; a dark spot on discocellulars and speck at origin of vein 2, an irregularly waved postmedial line; a waved submarginal line, with the area beyond it fuscous brown; a curved fulvous and ochreous line from the apex to vein 3. Hind wing with sinuous medial line; lunulate postmedial and submarginal lines; the outer area fuscous brown; both wings with fine marginal ochreous line.

Hab. Moulmein; Nilgiris; Ceylon; Java. *Exp.* 32 millim.

b. *The apex of the vesicular fold produced to a long point.*

2602. **Thermesia otophora,** n. sp.

Differs from *rivulosa* in being large and more uniformly coloured; hind wing with five lines, additional ante- and postmedial lines being present.

Hab. Nágas (*Doherty*). *Exp.* 40 millim. Type in coll. Elwes.

C. (Hypospila). *Male with the antennæ ciliated; the cell of hind wing short, veins 7 and 8 distorted, 6 given off below angle of cell.*

2603. **Thermesia bolinoides,** *Guen. Noct.* iii, p. 358; *C. & S.* no. 2348.
Thermesia signipalpis, *Wlk. Cat.* xv, p. 1572.

Differs from *rubricans* in the colour being almost always much darker red-brown; palpi black, white at tips. Fore wing with the reniform reduced to a pale speck; the postmedial line less oblique, arising from the costa before apex, and not angled. Hind wing with the postmedial line straight.

Hab. China; throughout India, Ceylon, and Burma; Andamans. *Exp.* 44 millim.

Genus ISCHYJA.

Ischyja, *Hübn. Verz.* p. 265 (1818).
Potamophora, *Guen. Noct.* iii, p. 122 (1852).

Type, *I. manlia*, Cram.

Range. China; Philippines; throughout the Indian region; Sumatra; Java; Borneo.

Palpi with the 2nd joint broad and rectangularly scaled, reaching vertex of head, the 3rd long, naked, blunt, and oblique; antennæ thickened and fasciculate in male; thorax and abdomen smoothly scaled; tibiæ without spines; fore tibiæ with a triangular tuft of hair; mid tibiæ slightly fringed; hind tibiæ clothed with long hair. Fore wing with the costa highly arched towards apex, which is produced and acute; the outer margin obliquely curved. Hind wing with the cell very short; male with veins 2, 3, 4 running close together to near outer margin.

Larvæ with four pairs of abdominal prolegs.

2604. **Ischyja manlia,** *Cram. Pap. Exot.* i, pl. 92, A; *Moore, Lep. Ceyl.* iii, pl. 163, figs. 1, 1 *a*, *b* (larva); *C. & S.* no. 2492.

♂. Head and thorax red-brown; abdomen fuscous or red-brown; a white spot at base of hind tibiæ, and others on the outer spur of mid legs and outer medial spur of hind legs. Fore wing pale or dark red-brown or olive-brown, irrorated with dark specks; traces of antemedial and medial waved lines; a straight oblique postmedial line; the orbicular and reniform grey or ochreous, or in the form of deep black quadrate spots with white edges; black spots below centre and end of cell generally present, each with a white lunule on it and conjoined by a streak; a large ochreous patch sometimes present from lower end of cell to inner margin; an obscure waved sub-marginal line commencing as an oblique streak from the apex. Hind wing very dark red-brown; the area near anal angle greyish, with dark strigæ; a broad, irregularly angled, purplish-blue medial band from the costa to vein 2; a black spot with pale streak on it above anal angle. Underside of fore wing with white irregular

postmedial band from the costa to vein 2; hind wing with dentate postmedial white line.

♀. Fore wing much more uniform in colour and without the black patches; the oblique line prominent; hind wing with the band broader and more regular; no mark above anal angle. The colour often very dark.

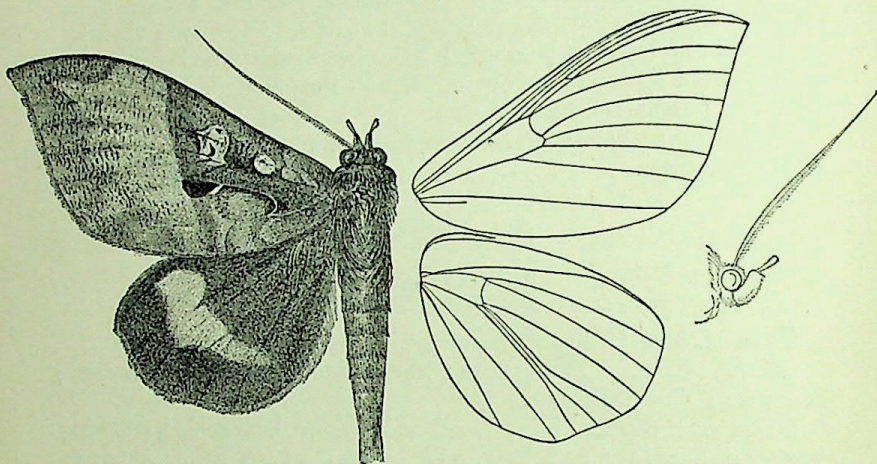



Fig. 299.—*Ischyja manlia*, ♂. $\frac{1}{1}$.

Larva purplish brown and ochreous, irregularly marked with short black streaks; the head ochreous, speckled with brown; the 4th, 5th, 6th, 10th, and 11th somites with short dorsal conical prominences. Pupa efflorescent. Food-plants, *Terminalia, Cinnamomia*, &c.

Hab. Philippines; throughout India, Ceylon, and Burma; Andamans; Java. *Exp.*, ♂ 80–100, ♀ 96–112 millim.

2605. **Ischyja schlegelii**, *Snell. Tijd. v. Ent.* xxviii, p. 4, pl. 1, fig. 2.
Ischyja glaucopteron, *Hmpsn. Ill. Het.* viii, p. 88, pl. 147, fig. 19.

♂. Differs from *manlia* in the fore wing being dark grey-green; the antemedial line prominent and angled below the cell; the orbicular and reniform grey; no oblique postmedial line, but the large grey dark-speckled patch from lower angle of cell to inner margin prominent, its upper angle joined by a dentate grey line from the costa and an irregular brown streak from apex; a marginal series of white specks. Hind wing with the band narrower and brighter blue; underside with the basal area suffused with bluish white to near the postmedial dentate line.

♀ more uniform in colour and greyish brown instead of green, with an oblique postmedial line and the irregular brown streak from apex.

Hab. Nilgiris; Burma; Java. *Exp.*, ♂ 82, ♀ 96 millim.

Genus PLATYJA.

Platyja, *Hübn. Verz.* p. 268 (1818).

Type, *P. umminea*, Cram.

Range. China; throughout India, Ceylon, and Burma; Penang; Java; Borneo; Cape York.

Palpi with the 2nd joint broad, quadrately scaled and reaching vertex of head, the 3rd short, blunt, and naked; thorax and abdomen smooth, the latter clothed with long coarse hair dorsally; tibiæ and hind tarsi very hairy in male. Fore wing with the costa highly arched towards apex, which is produced and acute; the outer margin obliquely curved. Hind wing with the cell short, the anal angle truncate.

SECT. I. Male with the antennæ bipectinate, the branches short; mid and hind legs with tufts of very long hair from the femoro-tibial joint.

2606. **Platyja umminea,** *Cram. Pap. Exot.* iii, pl. 267, F; *C. & S.* nos. 2621 & 2760.

Sympis subunita, *Guen. Noct.* iii, p. 344.
Cotuza drepanoides, *Wlk. Cat.* xv, p. 1552.
Ginœa removens, *Wlk. Cat.* xv, p. 1638.
Hulodes falcata, *Feld. Reis. Nov.* pl. 115, fig. 8.
Ophisma trajecta, *Wlk. Char. Undescr. Lep. Het.* p. 108.

Olivaceous red-brown. Fore wing with a few grey specks; an antemedial obliquely waved dark line; the orbicular small and dark;

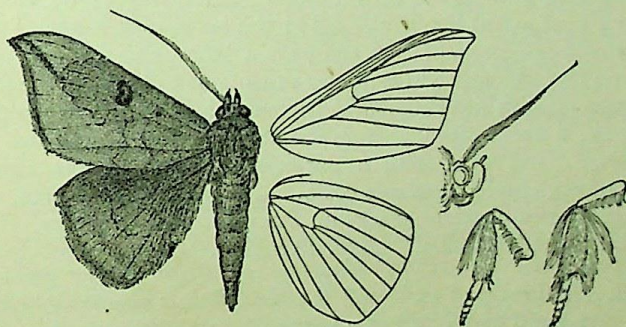



Fig. 300.—*Platyja umminea*, ♂. 1/1.

reniform with dark outline; a postmedial crenulate line, highly excurved beyond the cell, then bent inwards to below middle of cell above two dark-edged marks, which in the female are filled in with ochreous, chestnut, or white, and with chestnut rings or spots; a dark streak from apex, with some grey below it. Hind wing with crenulate postmedial line and traces of a submarginal line; the cilia tipped with white on both wings. Underside with lines

on the discocellulars, and a crenulate postmedial line with a series of white specks on it.

Hab. China; throughout India, Ceylon, and Burma; Penang; Sumatra; Java; Borneo; Cape York. *Exp.* 48–60 millim.

SECT. II. Male with the antennæ serrate and fasciculate; tufts of long scales from the coxæ of legs; hind legs with no tuft of hair from the femoro-tibial joint.

A. *Hind wing with the veins not distorted.*

2607. **Platyja exviola,** *Hmpsn. Ill. Het.* viii, p. 91, pl. 147, fig. 18.

♂. Very dark red-brown; the 3rd joint of palpi and tarsi spotted with white. Fore wing with traces of a waved antemedial line and of large orbicular and reniform stigmata; two small ring-marks beyond the cell; a very indistinct postmedial sinuous line, highly angled beyond the cell, and bent back above an amphora-shaped brown mark on vein 2 to below middle of cell; a sinuous whitish streak from apex; the outer area suffused with purple; a marginal series of white specks. Hind wing with the outer area suffused with purple; postmedial and marginal series of white specks. Underside with postmedial series of white specks; a pale sinuous apical streak.

Hab. Nilgiris. *Exp.* 60 millim.

*2608. **Platyja? torsilinea,** *Guen. Noct.* iii, p. 240.

Black-brown. Wings irrorated with blue-grey, the antemedial line straight and slightly oblique; two fine purplish medial lines striated with rufous, the area between them greyish or reddish yellow; postmedial line angled below the costa, then recurved from vein 2 to lower angle of cell, and with a large series above inner margin; the orbicular and reniform prominent and brown, the latter with two small white ring-marks beyond it and a speck above them on costa; a fine white line from the angle of the postmedial line to apex. Hind wing with a purplish submarginal line striated with rufous, obsolete towards costa. Underside grey-brown, with a medial series of white specks on the veins of both wings.

Hab. "Central India." *Exp.* 48 millim.

B. *Hind wing of male with the discocellulars almost obsolete, veins 6 and 7 curved upwards, 4 and 5 downwards.*

2609. **Platyja ciacula,** *Swinh. A. M. N. H.* (6) xii, p. 263.

♂. Differs from *exviola* in the markings of the fore wing being much more prominent; the lines ochreous; the antemedial line straight and oblique; the postmedial line white speckled, the mark enclosed by it ill-defined; the triangular chocolate patch on costa before apex prominent. Hind wing with sinuous white-speckled postmedial line. Both wings with the outer half suffused with purple throughout.

Hab. Nágas; Andamans. *Exp.* 62 millim.

Genus IONTHA.

Iontha, *Doubleday, Entomologist*, i, p. 297 (1842).

Type, *I. umbrina*, Doubl.

Range. Sylhet; Borneo.

♂. Palpi with the 2nd joint much thickened and reaching vertex of head, the 3rd naked and blunt; antennæ serrate; thorax and abdomen smoothly scaled, the latter very long and with immensely developed tufts of hair at extremity; fore tibiæ hairy; hind tibiæ and 1st joint of tarsi fringed with hair on the outer side. Fore

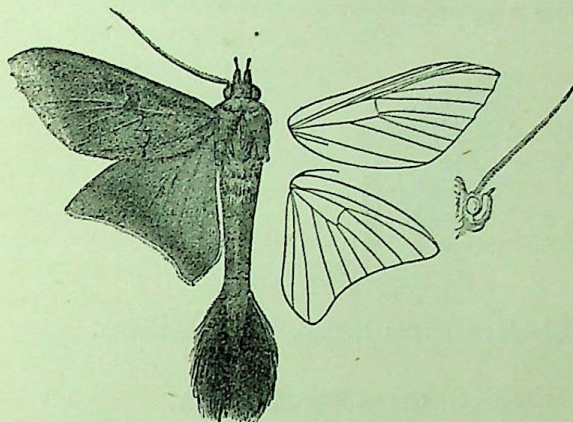



Fig. 301.—*Iontha umbrina*, ♂. ¾.

wing with the costa arched towards apex, which is acute; the outer margin oblique; the inner margin arched. Hind wing with the apex much produced and acute; the outer margin oblique and produced into a large lobe near anal angle; vein 3 given off long before end of cell; 8 running rather close to 7 to beyond end of cell.

2610. **Iontha umbrina**, *Doubl. Entom.* i, p. 298; *C. & S.* no. 2594.

♂. Dark fuscous brown; abdomen with the anal tuft black. Fore wing with a speck in the cell; both wings with marginal purplish grey band.

Hab. Sylhet; Borneo. *Exp.* 60 millim.

Genus CRITHOTE.

Crithote, *Wlk. Journ. Linn. Soc.* vii, p. 182 (1864).

Type, *C. horridipes*, Wlk.

Range. Khásis; Canara; Borneo.

♂. Palpi with the 2nd joint thickened and reaching vertex of head, the 3rd short, naked, and blunt; antennæ bipectinated, the branches short; thorax smoothly scaled; abdomen long, clothed

dorsally with coarse hair and with large anal tufts; tibiæ without spines; mid tibiæ moderately hairy and fringed with thin flattened scales on the inner side; hind tibiæ and tarsi with immensely developed tufts of hair. Fore wing arched towards apex, which is quadrate; the outer margin straight. Hind wing with the apex produced and acute; the outer margin straight to vein 2, then excised to anal angle; the inner margin fringed with long hair.

2611. **Crithote horridipes**, *Wlk. Journ. Linn. Soc.* vii, p. 183.

♂. Dark fuscous brown; the anal tufts and tufts on hind legs black. Fore wing with the basal and outer areas greyish.

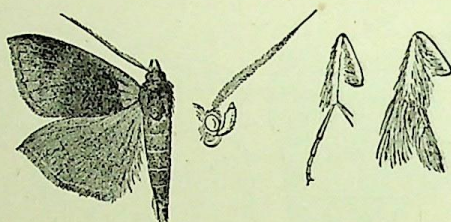



Fig. 302.—*Crithote horridipes*, ♂. ½.

Hab. Khásis; Canara; Borneo. *Exp.* 40 millim.

Genus HARMATELIA.

Harmatelia, *Moore, Lep. Atk.* p. 182 (1882).

Type, *H. basalis*, Moore.
Range. Sikhim; Khásis.

Palpi with the 2nd joint thickened and reaching vertex of head, the 3rd long and naked; antennæ fasciculated in male; thorax clothed with coarse hair; abdomen with dorsal tufts; tibiæ slightly hairy and without spines. Fore wing with the apex somewhat acute; the outer margin slightly angled at centre.

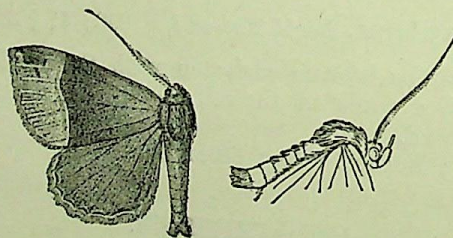



Fig. 303.—*Harmatelia basalis*, ♂. ½.

2612. **Harmatelia basalis**, *Moore, Lep. Atk.* p. 183, pl. 6, fig. 13; *C. & S.* no. 2726.

Head and thorax reddish brown. Fore wing with the basal two-thirds reddish black-brown, bounded by a nearly straight pale

line; a dark speck in cell; the outer area pale brown, with some fuscous suffusion and two dark specks near apex; some white specks on costa towards apex and a marginal series of minute dark specks. Abdomen and hind wing fuscous brown. Underside with cell-spot and traces of two postmedial lines.

Hab. Sikhim; Khásis. *Exp.* 50 millim.

Genus EPISPARIS.

Episparis, *Wlk. Cat.* x, p. 475 (1856).
Neviasca, *Wlk. Cat.* xvi, p. 7 (1858).
Pradiota, *Wlk. Cat.* xxxv, p. 1572 (1866).

Type, *E. penetrata*, Wlk., from Africa.

Range. Ethiopian and Oriental regions.

Palpi upturned and hairy; the 3rd joint minute; a short frontal tuft; antennæ bipectinated to two-thirds length in male; thorax and abdomen clothed with coarse hair; tibiæ hairy. Fore wing with the costa straight; the outer margin excised from vein 5 to outer angle. Hind wing with the outer margin produced to a point at vein 3 and excised below the point.

2613. **Episparis tortuosalis**, *Moore, P. Z. S.* 1867, p. 81, pl. 7, fig. 5; *C. & S.* no. 2841.

Head, thorax, and abdomen red-brown; the tarsi white. Wings with red-brown shades and dark striæ. Fore wing with an indistinct highly curved antemedial line; a dark speck in cell and minute white lunule on discocellulars; a purplish patch on disk; an indistinct postmedial line, highly excurved beyond cell and with a sinuous whitish line beyond it, terminating at outer angle, where it is joined by another white line from near apex, which is dentate below the costa; the margin and cilia whitish below the angle. Hind wing with indistinct medial band; a postmedial whitish line, highly angled outwards at vein 5; a yellow patch on centre of outer margin. Underside of fore wing with large, triangular, apical, chocolate white-edged patch; hind wing with the medial area white, with a white postmedial line and black spot at end of cell; a crenulate fuscous submarginal line.

Hab. Sikhim; Nilgiris. *Exp.* 56 millim.

2614. **Episparis varialis**, *Wlk. Cat.* xvi, p. 7; *Moore, Lep. Ceyl.* iii pl. 175, fig. 12; *C. & S.* no. 2842.
Episparis exprimens, *Wlk. Trans. Ent. Soc.* (3) i, p. 106; *C. & S.* no. 2839.
Episparis signata, *Wlk. Cat.* xxxiii, p. 1032.
Episparis davallia, *Feld. Reis. Nov.* pl. 120, fig. 41.
Pradiota sejunctata, *Wlk. Cat.* xxxv, p. 1572; *C. & S.* no. 2840.

Pale dull reddish brown. Fore wing with subbasal and antemedial white lines, the latter with the part below the cell displaced

outwards; a yellow patch at lower angle of cell and an irregular white spot on the discocellulars; an indistinct medial dark line excurved round cell; a pale sinuous postmedial line arising from a white spot on costa; a yellow apical patch; a pale patch on outer area, with a chocolate lunule on the margin below apex. Hind wing with dark mark on discocellulars; indistinct angled

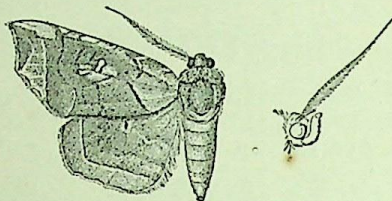



Fig. 304.—*Episparis varialis*, ♂. $\frac{1}{1}$.

fuscous medial line; a white postmedial line highly angled beyond cell; a chocolate lunule on the margin below apex, with a series of spots from it to anal angle. Underside whitish.

Hab. Throughout India, Ceylon, and Burma; Andamans; Java; Borneo. *Exp.* 50 millim.

2615. **Episparis sora,** *Swinh. P. Z. S.* 1889, p. 415.

♂. Differs from *varialis* in being much darker brown. Fore wing with a series of yellow spots on costa; the white spot and yellow patch at end of cell minute; the submarginal line dark; no lunule or white suffusion on outer margin. Hind wing with the postmedial line dark and more angled; no white suffusion.

Hab. Sikhim; Tenasserim. *Exp.* 52 millim.

Genus CLATERNA.

Claterna, *Wlk. Cat.* xv, p. 1543 (1858).
Trigonia, *Guen. Delt. & Pyr.* p. 11 (1854), præocc.

Type, *C. cydonia*, Cram.

Range. Ceylon; Java; Celebes.

Differs from *Episparis* in the palpi having the 3rd joint longer; the antennæ of male ciliated. Hind wing with the outer margin angled instead of being produced to a point; female with the outer margin of both wings very slightly angled.

2616. **Claterna cydonia,** *Cram. Pap. Exot.* i, pl. 22, F; *C. & S.* no. 2843.

Focilla submemorans, *Wlk. Cat.* xv, p. 1533.
Claterna exagens, *Wlk. Cat.* xv, p. 1543.

Fuscous brown; the tarsi white. Fore wing with indistinct antemedial curved bluish-white line, with some diffused white scales near it; a white line on discocellulars; a postmedial line ex-

curved beyond cell, with diffused white inside it and a large dark patch beyond it on the costa; a triangular white spot on costa before apex, with some white specks below it. Hind wing with indistinct irregular medial line and some white marks inside it; a white patch on outer margin from the angle to anal angle; a series of dark strigæ on margin. Underside with small black speck in cell of fore wing; hind wing with black speck in cell and lunule at end of it.

Fig. 305.
Claterna cydonia, ♂. ½.

Hab. Ceylon; Java; Celebes. *Exp.*, ♂ 50, ♀ 45 millim.

Genus AMPHIGONIA.

Amphigonia, *Guen. Noct.* iii, p. 337 (1852).

Type, *A. hepatizans*, Guen.

Range. Neotropical and Oriental regions.

Palpi with the 2nd joint reaching above vertex of head; the 3rd joint in male curved forwards, with a tuft of hair on inner side; antennæ of male very long and minutely ciliated; thorax and abdomen smoothly scaled; tibiæ hairy. Fore wing arched towards apex, which is produced and acute; the outer margin highly angled at centre. Hind wing with the outer margin produced to a curved point at vein 4.

2617. **Amphigonia hepatizans**, *Guen. Noct.* iii, p. 338, pl. 24, fig. 12; *Moore, Lep. Ceyl.* iii, pl. 173, fig. 4; *C. & S.* no. 2758.

Dark fuscous, with a purplish tinge. Fore wing with short subbasal waved antemedial and indistinct postmedial lines, incurved below end of cell; a rufous speck on discocellulars; a submarginal

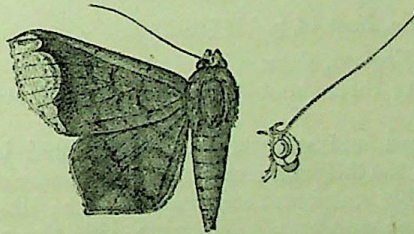



Fig. 306.—*Amphigonia hepatizans*, ♂. ½.

line with a sinus from below apex to below centre, its arc crossed by a crenulate rufous line; the outer area pale red-brown, except at apex. Hind wing with indistinct curved medial line and dentate

postmedial line. Underside with lunule at end of cell and straight postmedial line to both wings; fore wing with subapical spot.

Hab. Peninsular India, Ceylon, Burma; Andamans. *Exp.* 60 millim.

Genus BEMATHA.

Bematha, *Wlk. Cat.* xxxiii, p. 1095 (1865).

Type, *B. extensa*, Wlk.

Range. "N. India."

Palpi upturned and reaching just above vertex of head; antennæ

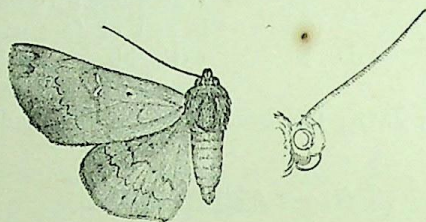



Fig. 307.—*Bematha extensa*, ♂. 1/1.

thickly ciliated; thorax and abdomen smoothly scaled; tibiæ hairy and not spined. Fore wing with the costa nearly straight; the outer margin obliquely rounded.

2618. **Bematha extensa**, *Wlk. Cat.* xxxiii, p. 1095; *C. & S.* no. 3024.

♂. Orange-yellow; the tarsi white. Fore wing with the costa and outer area suffused with rufous; a dark speck in cell and some white specks on discocellulars; an indistinct rufous waved line just beyond the middle and crenulate fuscous postmedial line. Hind wing with sinuous medial line and crenulate postmedial line. Underside with some rosy suffusion and white below costa of fore wing.

Hab. "N. India." *Exp.* 50 millim.

Genus OXYODES.

Oxyodes, *Guen. Noct.* iii, p. 128 (1852).

Type, *O. scrobiculata*, Fabr.

Range. China; throughout the Indian region; Java; Australia; Fiji.

Palpi upturned and smoothly scaled, the 2nd joint reaching vertex of head, the 3rd long; antennæ almost simple; thorax and abdomen smoothly scaled and somewhat slender; tibiæ not spined; fore tibiæ fringed with hair. Fore wing with the apex produced and acute; the outer margin slightly excised and the cilia crenulate.

2619. **Oxyodes scrobiculata**, *Fabr. Sp. Ins.* ii, p. 212; *Moore, Lep Ceyl.* iii, pl. 164, fig. 1; *C. & S.* no. 2497.
Phalæna clytia, *Cram. Pap. Exot.* iv, pl. 399, G.

Ochreous-brown or yellow-ochreous. Fore wing with subbasal, antemedial, medial, two postmedial, and a submarginal indistinct waved line; the orbicular and reniform with black edges and often filled in with black; a lunulate mark often present below the cell.

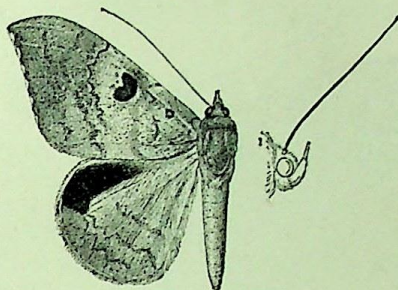



Fig. 308.—*Oxyodes scrobiculata*, ♂. ½.

Hind wing with a broad black fascia below the costa; two postmedial lines; an indistinct series of submarginal lunules. Underside brown, irrorated with grey; both wings with the inner area ochreous; a speck at end of cell; a postmedial line and blackish blotches on outer area.

Hab. China; throughout India, Ceylon, and Burma; Java; Fiji *Exp.* 64 millim.

Genus **HAMODES**.

Hamodes, *Guen. Noct.* iii, p. 202 (1852).
Armana, *Swinh. Trans. Ent. Soc.* 1890, p. 250.
Kalmina, *Swinh. Trans. Ent. Soc.* 1891, p. 480.

Type, *H. propitia*, Guen., from New Ireland.

Range. Throughout India and Burma; Andamans; New Ireland

Palpi reaching vertex of head, the 3rd joint minute; antennæ minutely fasciculated in male; head and thorax smoothly scaled; tibiæ not hairy and without spines. Fore wing usually highly arched towards apex, which is more or less produced and falcate. Hind wing with the anal angle truncate; vein 5 from lower angle of cell.

Sect. I. Male with no tuft on underside of fore wing; hind wing with the costa not arched.

A. *Fore wing with the outer margin oblique; the costa highly arched.*

2620. **Hamodes aurantiaca**, *Guen. Noct.* iii, p. 203; *C. & S.* no. 2579.
Ophisma attacicola, *Wlk. Cat.* xiv, p. 1383; *C. & S.* no. 2578.
Hypernaria discistriga, *Moore, P. Z. S.* 1867, p. 78; *C. & S.* no. 2580.
Hamodes marginata, *Moore, Lep. Atk.* p. 169; *C. & S.* no. 2581.

♂. Canary-yellow; the head above and base of collar black. Fore wing irrorated with fuscous and with traces of antemedial, medial, and postmedial lines, the two latter arising from fuscous patches on the costa; a speck in cell and lunule at end of it; a straight rufous line with yellow band inside it from apex to inner

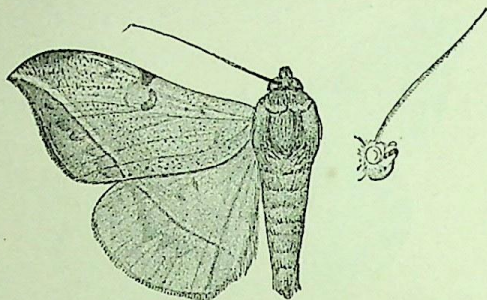



Fig. 309.—*Hamodes aurantiaca*, ♂. ½.

margin of hind wing above anal angle, sometimes with two dark blotches inside it on fore wing and one on hind wing, and with traces of a dentate line beyond it. Underside orange, with the lines rufous, prominent, and maculate.

♀ more ochreous in colour.

Hab. W. India; Sikhim; Assam; Burma; Andamans. *Exp.* 60–66 millim.

B. *Fore wing with the outer margin erect; the costa highly arched.*

2621. **Hamodes unilinea**, *Swinh. Trans. Ent. Soc.* 1890, p. 243.

♂. Ochreous-brown, slightly irrorated with black; head fuscous; collar reddish. Fore wing with black speck in cell; an indistinct, ochreous, slightly waved postmedial line, angled below the costa; traces of a dentate submarginal line. Hind wing with spot at end of cell; straight brown and ochreous medial line and traces of dentate submarginal line; both wings with series of marginal dark specks.

Hab. Beeling, Burma. *Exp.* 44 millim.

Sect. II. (*Kalmina*). Fore wing of male with large tuft of hair on underside below end of cell; the median nervure bent upwards; the costa highly arched. Hind wing with the costa immensely arched; the costal nervure bent upwards.

2622. **Hamodes ochracea**, *Swinh. Trans. Ent. Soc.* 1891, p. 481, pl. 19, fig. 3.

♂. Differs from *aurantiaca* in being bright orange. Fore wing with no black spot on costa above the reniform; the outer area

bright rufous; the inner part of the oblique line grey. Hind wing with the waved suffusion beyond the oblique line rufous.

Hab. Khásis. *Exp.* 60 millim.

Sect. III. (*Armana*). Fore wing with the costa slightly arched towards apex, which is but slightly produced; tibiæ more hairy.

2623. **Hamodes nigriricta**, *Swinh. Trans. Ent. Soc.* 1890, p. 250, pl. 8, fig. 1.

♂. Differs from *aurantiaca* in being much less irrorated with black. Fore wing with minute black specks in cell and at end of it; no dark marks on costa; the double oblique lines with the inner one prominent, filled in with pinkish, not bent out to apex of fore wings, and with a black spot beyond them at anal angle; no traces of dentate line beyond them.

Hab. Bassein, Pegu. *Exp.* 40 millim.

Genus PLEURONA.

Pleurona, *Wlk. Cat.* xxxv, p. 1564 (1866).
Chilkasa, *Swinh. P. Z. S.* 1885, p. 853.

Type, *P. falcata*, Wlk.

Range. Bombay; Burma; Andamans.

Palpi obliquely porrect, the 3rd joint minute; a sharp frontal tuft; thorax and abdomen clothed with coarse hair. Fore wing with the costa excised, then very highly arched towards apex, which is produced and acute, the outer margin excurved at the middle.

Sect. I. (*Chilkasa*). Antennæ of male fasciculated and with very long setæ on upperside. Fore and hind tibiæ fringed with very long thick hair; mid tibiæ with immense tufts of hair.

2624. **Pleurona perhamata.**
Chilkasa falcata, *Swinh. P. Z. S.* 1885, p. 854; *C. & S.* no. 3241 (præocc.).

♂. Head, thorax, and abdomen brownish ochreous. Fore wing with the basal two-thirds brownish ochreous, slightly irrorated with fuscous; sinuous, very indistinct, antemedial and medial lines; a double slightly sinuous postmedial line, with the area beyond it chocolate. Hind wing with the basal half brownish ochreous irrorated with fuscous; a double medial line with diffused chocolate beyond it shading off to the marginal area; both wings with fine marginal ochreous line. Underside with medial and postmedial nearly straight lines to both wings.

Hab. Bombay; Rangoon. *Exp.* 52 millim.

SECT. II. (*Pleurona*). Antennæ of male ciliated and without the long setæ; tibiæ without the long tufts and fringe of hair.

2625. **Pleurona falcata,** *Wlk. Cat.* xxxv, p. 1564; *Moore, P. Z. S.* 1877, p. 612, pl. 60, fig. 6; *C. & S.* no. 2823.

Bright red-brown; palpi, fore legs and claspers fulvous. Fore wing with indistinct subbasal and antemedial lines; very indistinct orbicular and reniform spots; a darker ill-defined medial band; a very indistinct postmedial line, excurved beyond cell and with a paler triangular patch on the costa beyond it; a submarginal series of pale specks and marginal series of dark specks. Hind wing with pale speck at end of cell; indistinct sinuous medial and postmedial lines, the latter with a fulvous line beyond it; series of dark submarginal and pale marginal specks. Underside of fore wing with the costa, orbicular and reniform spots pale; a straight submarginal line; hind wing with pale cell-spot and crenulate submarginal line; both wings with indistinct medial and postmedial lines.

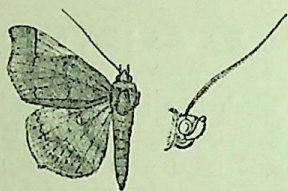



Fig. 310.
Pleurona falcata, ♂. 1/1.

Hab. Burma; Andamans. *Exp.* 38 millim.

Genus LYCIMNA.

Lycimna, *Wlk. Cat.* xx, p. 214 (1860).

Type, *L. polymesata*, Wlk.

Range. Sikhim; Assam; Burma.

Palpi obliquely upturned, the 2nd joint reaching vertex of head and much thickened, the 3rd short. Antennæ minutely ciliated; thorax and abdomen smoothly scaled, the patagia long; tibiæ moderately hairy and without spines. Fore wing with the costa arched at base, then slightly excised to apex, which is produced and acute; the outer margin highly angled at vein 4. Hind wing with the anal angle truncate.

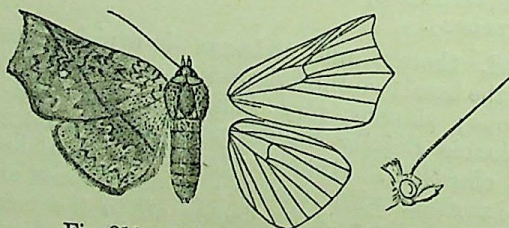



Fig. 311.—*Lycimna polymesata*, ♂. 1/1.

2626. **Lycimna polymesata,** *Wlk. Cat.* xx, p. 215; *C. & S.* no. 3185.

Head and thorax orange; abdomen pale reddish; wings pale

reddish and orange, irrorated with black. Fore wing with three indistinct waved black lines on basal area; a small orbicular spot; traces of numerous indistinct waved lines on outer half of wing, crossed by a more prominent oblique line from costa near apex; a small hyaline spot between veins 3 and 4; a submarginal series of black specks. Hind wing with oblique antemedial line; three indistinct waved lines on postmedial area; a submarginal series of black specks.

Hab. Sikhim; Assam; Burma. *Exp.* 44 millim.

Genus HOMÆA.

Homæa, *Guen. Noct.* iii, p. 206 (1852).

Type, *H. clathrum*, Guen.
Range. Abyssinia; Aden; N.W. India.

Palpi upturned, the 2nd joint reaching vertex of head and roughly scaled, the 3rd prominent; antennæ minutely ciliated; thorax and abdomen smoothly scaled and somewhat slender; mid tibiæ spined; the tibiæ of male fringed with long hair, and the fore and hind tarsi fringed with hair. Fore wing with the apex somewhat rounded.

2627. **Homæa clathrum,** *Guen. Noct.* iii, p. 207; *C. & S.* no. 2551.

Head and thorax pale, mottled with dark brown; abdomen fuscous, ringed with white. Fore wing fuscous brown, with numerous

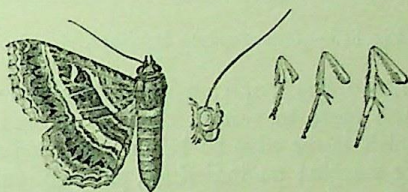



Fig. 312.—*Homæa clathrum*, ♂. 1/1.

indistinct pale waved lines; oblique whitish ante- and postmedial bands, with a fine line beyond each, the veins between the bands whitish, and a whitish patch on the discocellulars; an irregularly waved black submarginal line and crenulate marginal line. Hind wing similar, but with one band only, which is medial. Underside of both wings with a black grey-suffused postmedial band.

Hab. Abyssinia; Aden; N.W. India. *Exp.* 40–44 millim.

Genus OMMATOPHORA.

Ommatophora, *Guen. Noct.* iii, p. 190 (1852).

Type, *O. luminosa*, Cram.
Range. Sikhim; Assam; Java; Philippines.

Palpi with the 2nd joint reaching vertex of head, the 3rd naked; antennæ almost simple; thorax and abdomen smoothly clothed

with hair; tibiæ thickly fringed with hair especially the fore tibiæ; hind tarsi fringed with hair on upperside. Fore wing with the apex nearly rectangular. Hind wing with vein 5 from lower angle of cell, which is rather short.

2628. **Ommatophora luminosa**, *Cram. Pap. Exot.* iii, pl. 274, D; *C. & S.* no. 2545.
Ommatophora fulvastra, *Guen. Noct.* iii, p. 191.

Head, thorax, and abdomen dark brown; palpi with a black spot at base; a black shoulder-stripe. Fore wing brown; the basal and costal areas suffused with glistening purplish, the postmedial area with vinous red; curved subbasal and waved antemedial black lines; an ocellus beyond end of cell composed of a white-edged brown lunule on inner side, a blackish pupil with greenish-yellow patch on it, the outer edge black and arising from

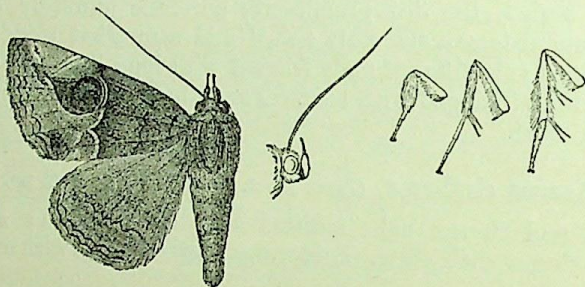



Fig. 313.—*Ommatophora luminosa*, ♂. 1.

a black spot above the pupil; a postmedial line oblique and whitish from the costa to vein 6, then becoming a curved black line with greenish lower edge to below the ocellus, and thence sinuous to inner margin; an indistinct, pale, oblique submarginal line, dentate near costa and inner margin. Hind wing with fuscous medial line; highly dentate postmedial, with two indistinct fuscous lines beyond it; both wings with two crenulate black lines inside the margin; underside with large black cell-spot and some white marks on a diffused submarginal band.

Hab. Sikhim; Assam; Java; Philippines. *Exp.* 62 millim.

Genus SPIRAMA.

Spirama, *Guen. Noct.* iii, p. 194 (1852).
Hypopyra, *Guen. Noct.* iii, p. 198.
Enmonodia, *Wlk. Cat.* xiv, p. 1332.
Maxula, *Wlk. Cat.* xxxiii, p. 1096 (1865).

Type, *S. retorta*, Linn.

Range. Japan; China; Chusan; throughout India, Ceylon, and Burma; Andamans; Borneo; Java.

Differs from *Ommatophora* in the antennæ usually being minutely fasciculate in male, the tibiæ not hairy, and the mid tibiæ spined.

SECT. I. (*Spirama*). Fore wing with the costa arched towards apex, which is nearly rectangular; male with a fold on inner area of hind wing, containing an erectile ridge of very long hair; antennæ fasciculate.

2629. **Spirama retorta**, *Cram. Pap. Exot.* ii, pl. 116, F; *C. & S.* no. 2561.

Noctua spiralis, *Fabr. Sp. Ins.* ii, p. 211.
Speiredonia helicina, *Hübn. Zutr.* iii, 14, figs. 437, 438; *C. & S.* no. 2559.
Spirama suffumosa, *Guen. Noct.* iii, p. 195.
Spirama triloba, *Guen. Noct.* iii, p. 197; *C. & S.* no. 2562.
Hypopyra mollis, *Guen. Noct.* iii, p. 198.
Spirama remota, *Feld. Sitzb. Akad. Wiss. Wien, M. N. Cl.* xliii, p. 43.
Erebus chemista, *Koll. Hügel's Kaschmir*, iv, p. 475.
Spiramia cohærens, *Wlk. Cat.* xiv, p. 1321; *C. & S.* no. 2558.
Spirama simplicior, *Butl. Trans. Ent. Soc.* 1881, p. 198.
Spirama modesta, *Moore, Lep. Atk.* p. 168; *C. & S.* no. 2560.
Spirama rosacea, *Butl. Ill. Het.* vii, p. 78, pl. 132, figs. 9–10.
Spirama confusa, *Butl. Ill. Het.* vii, p. 78, pl. 133, figs. 6–8.
Spiramia indenta, *Hmpsn. Ill. Het.* viii, p. 89, pl. 147, figs. 20–21.

♂. Head and collar dark chestnut-brown; thorax paler with dark bands; abdomen crimson with triangular black dorsal patches. Wings fuscous brown. Fore wing with the costal and outer areas more or less suffused with purplish and sometimes with an olive tinge; an antemedial line excurved below costa, then oblique to

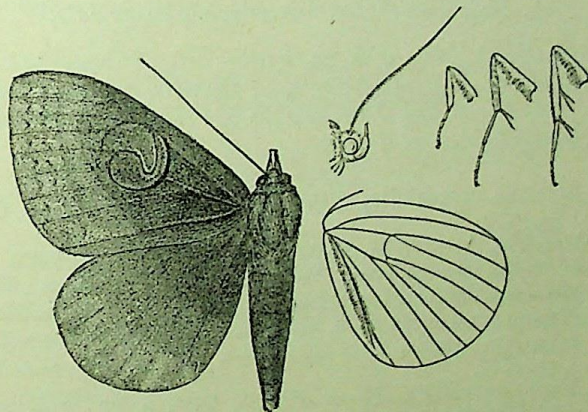



Fig. 314.—*Spirama retorta*, ♂. ½.

inner margin; a large 'inverted-comma' mark beyond end of cell, with ochreous and black edges and some white on inner edge of 'tail,' the centre fuscous-black; a postmedial curved line passing round the stigma or interrupted by it; another postmedial line excurved below costa and slightly sinuous; two crenulate submarginal lines and two more prominent lines within the

margin. Hind wing with indistinct antemedial, medial, and traces of two postmedial and a submarginal line. Underside suffused with dull red and having two medial lines and one postmedial to each wing.

♀. The ground-colour ochreous. Fore wing with the stigma larger. Hind wing with the markings prominent; two antemedial lines; an ochreous submarginal line and two crenulate black lines inside the margin. Underside orange-scarlet; each wing with cell-spot, medial, postmedial, and submarginal lines, and series of lunules inside the margin.

The form *helicina* is more brightly coloured; female with the ochreous submarginal line of hind wing crenulate. *Indenta* has the markings not prominent; the stigma reduced in size and with two indentations in its outer edge; male with the thorax pale, the fore wing suffused with olive and vinous; female with the submarginal line of hind wing not crenulate. *Triloba* has the head of the stigma reduced to three grey spots, often with black centres; male with the thorax pale and suffused with vinous and olive; female ochreous, with a purplish or, in the form *rosacea*, bright pink tinge, all the lines indistinct.

Hab. Japan; China; Chusan; throughout India, Ceylon, and Burma; Andamans; Java. *Exp.*, ♂ 64–76, ♀ 66–88 millim.

SECT. II. Fore wing with the costa straighter towards apex, which is more or less acute and produced; male with no fold or long hair on inner area of hind wing.

A. *Male with the antennæ minutely fasciculate.*

a. (Hypopyra). *Male with an erectile tuft of long hair from femoro-tibial joint of fore legs; the tibiæ and hind tarsi not fringed with long hair, nor the hind wing clothed with long woolly hair on underside.*

2630. **Spirama vespertilio**, *Fabr. Mant. Ins.* ii, p. 136; *C. & S.* no. 2572.

Hypopyra shiva, *Guen. Noct.* iii, p. 199; *C. & S.* no. 2570.
Hypopyra feniseca, *Guen. Noct.* iii, p. 200; *C. & S.* no. 2564.
Hypopyra ossigera, *Guen. Noct.* iii, p. 201; *C. & S.* no. 2565.
Hypopyra extricans, *Wlk. Cat.* xiv, p. 1328; *C. & S.* no. 2563 A.
Hypopyra pandia, *Feld. Reis. Nov.* pl. 115, fig. 12; *C. & S.* no. 2567.
Hypopyra pallida, *Moore, P. Z. S.* 1883, p. 26; *Lep. Ceyl.* iii, pl. 166, figs. 1, 1 *a*; *C. & S.* no. 2566.
Hypopyra distans, *Moore, Lep. Atk.* p. 169; *C. & S.* no. 2563.

Differs from *retorta* in the abdomen being crimson, with the dorsal area grey or brown to near extremity. Fore wing with the stigma never more developed than in the form *indenta* and usually reduced to spots, or to two spots on discocellulars, or altogether absent; the outer postmedial line of fore wing and the medial and submarginal lines of hind wing crenulate.

The darkest form is *vespertilio*, which has the male dark brown; the costal and outer areas of fore wing suffused with grey and olive; the stigma most developed; female much paler and greyer. *Feniseca* has the male grey suffused with vinous red; the stigma much reduced or absent; there is often some white on the crenulate submarginal line of both wings; in a Bornean specimen the ground-colour is lilacine grey: the female is paler and greyer, almost white in the form *extricans*. *Shiva* has an ochreous tinge in both sexes.

Hab. Japan; China; thoughout India, Ceylon, and Burma; Andamans; Borneo. *Exp.*, ♂ 74–90, ♀ 72–104 millim.

b. (Enmonodia). *Male with the tibiæ and hind tarsi fringed with very long hair; no erectile tuft on fore tibia; the underside of hind wing clothed with long woolly hair.*

2631. **Spirama pudens**, *Wlk. Cat.* xiv, p. 1329; *C. & S.* no. 2569.
Enmonodia hypopyroides, *Wlk. Cat.* xiv, p. 1333.
Hypopyra persimilis, *Moore, P. Z. S.* 1877, p. 608; *C. & S.* no. 2568.

Differs from the form *feniseca* in the stigma of the fore wing consisting of a large brown spot beyond the lower angle of cell, which may be reduced to three spots or be absent in the form *persimilis*; the two postmedial lines evenly curved, the outer crenulate, the inner waved from costa to vein 4.

Hab. Japan; Andamans; Sumatra; Borneo; Nias. *Exp.* 92–106 millim.

B. (Maxula). *Antennæ of male with bristles and cilia; fore and hind tibiæ sometimes spined.*

2632. **Spirama unistrigata**, *Guen. Noct.* iii, p. 201; *C. & S.* no. 2571.
Maxula idonea, *Wlk. Cat.* xxxiii, p. 1096.
Angerona poeusaria, *Wlk. Cat.* xx, p. 243.

♂. Differs from *vespertilio* in being grey speckled with brown; the head dark. Fore wing with curved and waved antemedial, medial, and postmedial lines; the stigma sometimes well developed, usually reduced to spots or obsolete; a pale straight submarginal line to both wings.

♀ paler and greyer.

A Burmese male has the ground-colour lilacine grey; the female yellow suffused with grey and vinous red; a Ceylon male is purplish with a reddish tinge and some yellow on postmedial line of fore wing.

Hab. Sikhim; Assam; Burma; Trincomali. *Exp.*, ♂ 52–58, ♀ 54–68 millim.

Genus MINIODES.

Miniodes, *Guen. Noct.* iii, p. 119 (1852).

Type, *M. discolor*, Guen., from Africa.
Hab. W. Africa; N.E. India.

Antennæ thickened in male; palpi with the 2nd joint somewhat broad and reaching just above vertex of head, the 3rd long, blunt, and oblique; thorax smoothly scaled; abdomen clothed with long hair on dorsum; legs smoothly scaled; the tibiæ without spines. Fore wing with the costa highly arched; the apex slightly produced; the inner and outer margins forming a continuous curve. Hind wing clothed with long hair at base; the apex nearly quadrate.

In the typical section (Sect. I.) the antennæ have long bristles and cilia in male.

Sect. II. Antennæ of male simple; fore wing with the apex produced to two slight projections.

2633. **Miniodes ornata**, *Moore, Lep. Atk.* p. 166; *C. & S.* no. 2488.

Head and thorax fulvous and dark red-brown; abdomen bluish black. Fore wing chestnut, thickly irrorated with dark brown; the

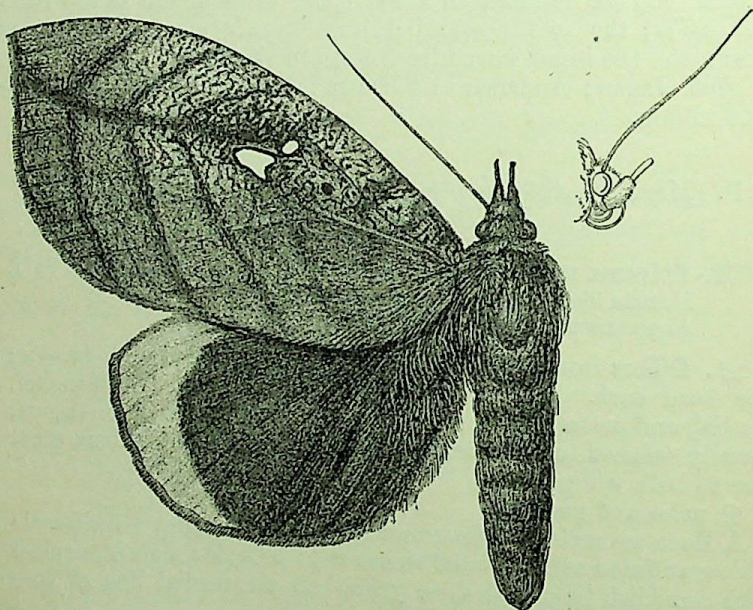



Fig. 315.—*Miniodes ornata*, ♂. ½.

costal area orange-fulvous to beyond the cell; six indistinct angled dark lines; a white black-ringed spot at upper angle of cell, with a black fascia from it to outer margin below apex; a large white

black-edged lunule at lower angle of cell. Hind wing blue-black, with the apical area orange, narrowing to vein 2; the cilia dark.
Hab. Sikhim; Khásis. *Exp.* 140 millim.

Genus PHYLLODES.

Phyllodes, *Boisd. Voy. Astrolabe, Lép.* p. 246 (1832).

Type, *P. conspicillator*, Cram., from Amboina.
Range. N.E. India; Burma; Andamans; Malayan region; Philippines; New Guinea and neighbouring groups of islands.
Differs from *Miniodes* in the tibiæ being heavily spined; antennæ thickened and simple; the fore wing narrower; the inner and outer margins quite evenly curved.
Larvæ with four pairs of abdominal prolegs.

SECT. I. Palpi with the 3rd joint minute; fore wing with the apex produced to a long blunt projection.

2634. **Phyllodes ustulata**, *Westw. Cab. Or. Ent.* p. 57, pl. 28, fig. 1; *C. & S.* no. 2490.
Phyllodes despicillator, *Guen. Noct.* iii, p. 122.

Head, thorax, and abdomen fuscous; the palpi chestnut. Fore wing golden brown; the inner area fuscous; the basal costal area chestnut striated with rufous; a large rufous lunule with dark edges at end of cell; a rufous patch beyond the cell and spot below vein 2; fuscous fasciæ on and below costa towards apex; striæ of raised scales on the veins below the cell and in interno-median interspace. Hind wing fuscous brown; the apical area orange.
Hab. Sikhim; Sylhet. *Exp.* 132 millim.

SECT. II. Palpi with the 2nd joint fringed with very long hair in front, producing a rounded form; the 3rd long, oblique, and knobbed at extremity; fore wing with the apex produced to an acute point.

2635. **Phyllodes eyndhovii**, *Voll. Tijd. v. Ent.* 1858, ii, p. 86, pl. 6.
Phyllodes fasciata, *Moore, P. Z. S.* 1867, p. 69; *C. & S.* no. 2486.
Phyllodes semilinea, *Wlk. Journ. Linn. Soc.* vii, p. 176.

Head and thorax pale red-brown; the basal joint of antennæ silver; silver spots at base of fore and mid tibiæ. Fore wing pale golden olive, with traces of six angulated lines; the orbicular a black speck; a sinuous ochreous mark on discocellulars, with double rufous edge; an oblique dark streak from apex to below the discocellular mark. Hind wing brownish fuscous, with broad, irregularly waved, orange medial band with diffused black on each side of it; underside with a large orange lunule on a black patch below lower angle of cell.
Hab. Sikhim; Assam; Borneo. *Exp.* 136 millim.

2636. **Phyllodes consobrina**, *Westw. Cab. Or. Ent.* p. 57, pl. 28, fig. 2; *C. & S.* no. 2485.
Phyllodes perspicillator, *Guen. Noct.* iii, p. 120.
Phyllodes maligera, *Butl. Ent. Mo. Mag.* xx, p. 138; *C. & S.* no. 2487.
Phyllodes roseigera, *Butl. P. Z. S.* 1883, p. 164; *C. & S.* no. 2489.

Head and thorax fuscous, with a purple bloom; abdomen blue-black. Fore wing fuscous brown, with a purplish gloss and irrorated with ochreous scales; the orbicular a brown speck; an S-shaped brown mark on discocellulars, its centre outlined with red-brown, its edges brown, and two white marks on it near its lower angle; an oblique ochreous fascia from apex to below angle of cell, whence it is bent down to inner margin; a large grey-brown patch usually present between the fascia and outer angle, with pale striæ on it. Hind wing blue-black; a large crimson patch with white centre at anal angle. Underside striated with white and with whitish between the veins of the fore wing.

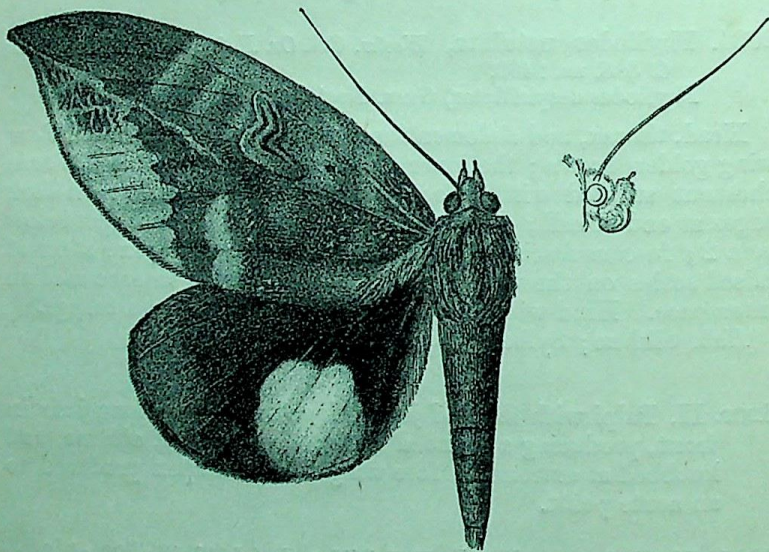



Fig. 316.—*Phylodes consobrina*, ♂. ½.

The form *roseigera*, from the Andamans, has hardly a trace of white on the crimson patch.

Hab. Throughout N.E. India; Burma; Andamans; Ceylon. *Exp.* 124–142 millim.

Genus OPHIDERES.

Ophideres, *Boisd. Faun. Ent. Madag., Lép.* p. 99 (1833).
Trisophaes, *Hübn. Verz.* p. 263 (1818), non descr.
Mænas, *Hübn. Verz.* p. 264.
Rhytia, *Hübn. Verz.* p. 264.
Othreis, *Hübn. Verz.* p. 264.

Corycia, *Hübn. Verz.* p. 265.
Adris, *Moore, Trans. Z. S.* xi, p. 69 (1881).
Khadira, *Moore, Trans. Z. S.* xi, p. 69.
Purbia, *Moore, Trans. Z. S.* xi, p. 70.
Argadesa, *Moore, Trans. Z. S.* xi, p. 74.

Type, *O. fullonica*, Linn.

Range. Throughout the tropical zone.

Palpi with the 2nd joint thickened and reaching vertex of head, the 3rd blunt and naked; antennæ minutely ciliated in male; metathorax with slight tufts; abdomen clothed with coarse hair on dorsum; tibiæ not spined and clothed with long hair. Fore wing with the costa arched; the apex acute; the inner margin lobed and with tufts of hair near base and at outer angle.

Larvæ with four pairs of abdominal prolegs, the first pair rudimentary.

SECT. I. (*Mænas*). Palpi with the 2nd joint very short and not spatulate. Fore wing with the outer margin straight; the cilia non-crenulate.

2637. **Ophideres salaminia**, *Fabr. Ent. Syst.* iii, 2, p. 17; *Moore, Lep. Ceyl.* iii, pl. 161, fig. 1, *a*, *b* (larva); *C. & S.* no. 2478.

Head and collar plum-colour; thorax green, the metathoracic tufts and abdomen orange. Fore wing golden green; a broad cream-coloured costal fascia from near base of inner margin to apex, striated with pale red and turning to green at costa; a cream-coloured marginal band; a curved red streak below vein 2. Hind wing orange, with large black lunule beyond lower angle of cell; a black marginal band with cilial whitish spots from costa to vein 2. Underside of fore wing fuscous, orange at base, and with broad whitish postmedial band not reaching costa or inner margin; the cilia whitish.

Larva dark purplish grey with a few whitish specks; the 4th, 5th, and 6th somites with small yellowish subdorsal spots, beneath which, on 5th and 6th somites, is a red-ringed black ocellus with whitish pupil; 11th somite with a conical reddish dorsal tubercle. Before changing to pupa the colour becomes olive-brown with dark specks; a pale lateral fascia on medial somites and purplish fascia from the tubercle to last abdominal proleg. Food-plant, *Menispermum.*

Hab. Madagascar; Formosa; throughout the Oriental region to Australia and Fiji. *Exp.* 80–104 millim.

SECT. II. Palpi with the 3rd joint long and spatulate at extremity.

A. *Fore wing with the apex not produced; the outer margin rounded.*

a. *Fore wing with the cilia non-crenulate.*

2638. **Ophideres ancilla**, *Cram. Pap. Exot.* ii, pl. 149, F; *Moore, Lep. Ceyl.* iii. pl. 161, fig. 3, *a*, *b* (larva); *C. & S.* no. 2475.

Phalæna strigata, *Donov. Ins. Ind.* pl. 54, fig. 2.
Othreis homœna, *Hübn. Verz.* p. 264.
Ophideres bilineosa, *Wlk. Cat.* xiii, p. 1227.

♂. Head and thorax fulvous brown; the collar, metathoracic tufts, and tibiæ with an orange tinge; head and collar with a purple bloom; abdomen orange. Fore wing olive-green, suffused with purplish red-brown and striated with rufous; dark subbasal and antemedial lines and slightly curved postmedial line; traces of some waved medial lines; an indistinct reniform stigma and dentate submarginal line. Hind wing orange, with large black lunule beyond lower angle of cell; a submarginal band with waved edges from costa to vein 2. Underside of fore wing with the postmedial band orange.

♀. Fore wing much darker, with deep purple and chocolate tones; a broad verditer-green fascia below the cell, sending bars to inner margin near base and outer angle, and conjoined to the green reniform spot.

Larva purplish brown, with numerous blue specks and large yellow patches on 3rd, 4th, and 5th somites, the two latter forming ocelli with yellow iris and azure-blue black-edged pupil; 8th and 9th somites with irregular yellow patches; a dorsal tubercle on 11th somite. Food-plant, *Menispermum*. Pupa orange, burnished, and roughened.

Hab. Throughout India, Ceylon, and Burma. *Exp.* 80 millim.

b. (Ophideres). *Fore wing with the cilia non-crenulate in male, crenulate in female.*

2639. **Ophideres fullonica**, *Linn. Syst. Nat.* i, 2, p. 812; *Moore, Trans. Z. S.* xi, p. 64, pl. 12, figs. 1, 1 *a* (larva); *C. & S.* no. 2477.
Noctua dioscoriæ, *Fabr. Sp. Ins.* ii, p. 212.
Phalæna pomona, *Cram. Pap. Exot.* i, pl. 77, C.
Phalæna cajeta, *Cram. Pap. Exot.* i, pl. 30, A, B, C; *C. & S.* no. 2476.
Ophideres multiscripta, *Wlk. Cat.* xiii, p. 1226.

Head and thorax red-brown suffused with plum-colour; abdomen orange. Fore wing red-brown, usually with a greenish tinge and irrorated with dark specks; an oblique antemedial line, generally dark and indistinct, but sometimes pale and prominent; the reniform indistinct; a curved postmedial line, almost always met by an oblique streak from apex. Hind wing orange, with a large black lunule beyond lower angle of cell; a marginal black band with cilial pale spots from costa to vein 2. Underside of fore wing with the postmedial band orange.

♀. Fore wing much more variegated and striated with dark red-brown; the reniform dark and sending a spur along median nervure to below the orbicular speck; a triangular white mark usually present on the postmedial line below vein 3.

Larva. 11th somite dilated and surmounted by a tubercle; colour dark purplish brown, the dorsum brown from 6th to 11th somites;

legs red; spiracular scarlet patches largest posteriorly and with some irregular white markings round them, on somite 9 in the form of an oblique white bar; a yellow subdorsal mark on 4th somite;

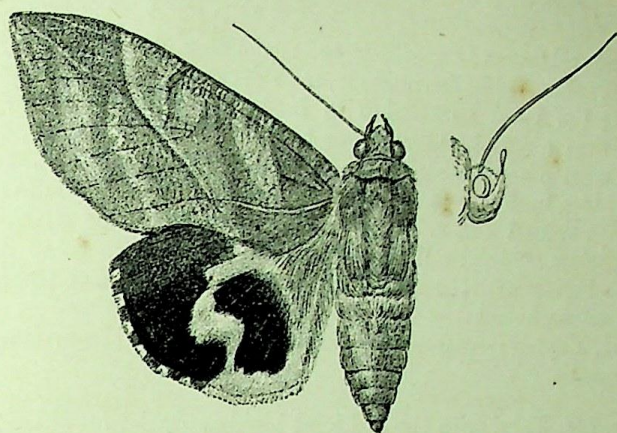



Fig. 317.—*Ophideres fullonica*, ♂. ½.

black ocelli with yellow iris and white pupils on 5th and 6th somites, and two yellow patches on 11th somite.

Hab. Africa; throughout the Oriental region to New Guinea and Australia. *Exp.*, ♂ 80–94, ♀ 90–110 millim.

c. (Argadesa). *Fore wing with the cilia crenulate in both sexes.*

2640. **Ophideres materna**, *Linn. Syst. Nat.* i, 2, p. 840; *Moore, Lep. Ceyl.* iii, pl. 161, fig. 2; *C. & S.* no. 2474.
Noctua hybrida, *Fabr. Syst. Ent.* p. 593.

♂. Head and thorax greenish grey; abdomen orange. Fore wing greenish grey with very numerous faint striated reddish lines; three rufous spots at end of cell; a dark oblique line from near apex to centre of inner margin; a silvery patch on vein 1 and another below lower angle of cell; a marginal black band with crenulate inner edge; a series of white cilial spots. Underside orange; fore wing with the costa and apical area blotched with rufous; oblique postmedial and subapical black bands; hind wing with the apical area blotched with rufous; a black spot on costa; another beyond lower angle of cell; a marginal black band from vein 5 to anal angle.

♀ with the fore wing much more prominently striated with rufous; the silvery patches below and beyond cell very large and conjoined, crossed by white streaks above vein 2 and beyond cell.

Hab. Throughout India, Ceylon, and Burma; Andamans; Java. *Exp.* 96 millim.

B. (Khadira). *Fore wing with the apex produced to a rounded lobe.*

2641. **Ophideres aurantia**, *Moore, P. Z. S.* 1877, p. 607; *id. Trans. Z. S.* xi, p. 69, pl. 13, fig. 4; *C. & S.* no. 2481.
Adris rutilus, *Moore, Trans. Z. S.* xi, p. 70; *C. & S.* no. 2482.

Head and thorax ferruginous, suffused with plum-colour; abdomen orange. Fore wing ferruginous, with dark striæ and slight purple bloom; the veins speckled with blue; the reniform green and indistinct; a dark line from apex to centre of inner margin, sometimes with green patches beyond it. Hind wing orange, with a large black lunule beyond lower angle of cell; a submarginal patch between veins 1 and 2. Underside orange; fore wing with black mark below angle of cell and beyond the cell between veins 3 and 5; hind wing with the lunule and patch of upperside, or the latter sometimes wanting.

Hab. Ceylon; Andamans; Borneo. *Exp.* 108–120 millim.

SECT. III. Palpi with the 3rd joint highly spatulate at extremity.

A. (Adris). *Fore wing highly produced at apex, the outer margin very obliquely rounded.*

2642. **Ophideres tyrannus**, *Guen. Noct.* iii, p. 110; *Moore, Trans. Z. S.* xi, p. 69, pl. 13, fig. 5; *C. & S.* no. 2483.

Head and thorax dark red-brown with plum-coloured bloom; some blue on 3rd joint of palpi and sides of thorax; fore and mid tibiæ with a silvery spot near base; tarsi spotted with white; abdomen orange. Fore wing chestnut-red or green, much suffused and striated with rufous; an antemedial oblique rufous line; the reniform and orbicular green; a line from apex to centre of inner margin, often outlined with green and sometimes with pale patches inside it; the outer area sometimes with pale patches towards outer angle; a blue speck near base and others on the veins. Hind wing orange, with very large black lunule beyond lower angle of cell; a black submarginal band with waved edges from costa to vein 2. Underside orange; fore wing with black medial and postmedial bands; hind wing with the lunule and a postmedial band.

A Sikhim specimen has the distance between the tufts on lobe and at outer angle of fore wing longer; underside with the black postmedial band conjoined to black marginal suffusion.

Hab. Japan; China; throughout the Himalayas; Calcutta. *Exp.* 110–120 millim.

B. (Rhytia). *Fore wing not produced at apex; the outer margin rounded.*

2643. **Ophideres hypermnestra**, *Cram. Pap. Exot.* iv, pl. 323, A, B; *C. & S.* no. 2480.

♂. Head and thorax yellow-green; palpi, collar, and tegulæ

marked with grey; abdomen orange, the anal tuft brown. Fore wing yellow-green, with dark striæ; some grey patches on inner and outer areas; an oblique rufous antemedial line; a very oblique rufous line from the costa before apex to centre of inner margin and curved below the costa, where it is joined by a dark streak from the apex. Hind wing orange, with a black spot at lower angle of cell and another above anal angle; the marginal area black from apex to vein 2 and with marginal and cilial white spots, its inner edge waved. Underside of fore wing with the postmedial band white.

♀ with large and small white rufous-striated patches and spots on fore wing below and beyond cell, at outer angle, and below apex.

Hab. Throughout India, Ceylon, and Burma. *Exp.* 88 millim.

2644. **Ophideres cocalus**, *Cram. Pap. Exot.* ii, pl. 134, B; *C. & S.* no. 2479.
Noctua maculata, *Weber, Observ. Ent.* p. 111.
Ophideres plana, *Wlk. Cat.* xiii, p. 1226.

Differs from *hypermnestra* in having no black spot on hind wing; the black marginal band with nearly even inner edge and extending to anal angle.

Hab. "Coromandel"; Sylhet; Java. *Exp.* 86 millim.

2645. **Ophideres discrepans**, *Wlk. Cat.* xiii, p. 1227; *Moore, Trans. Z. S.* xi, p. 71, pl. 14, fig. 1; *C. & S.* no. 2484.
Ophideres archon, *Feld. Reis. Nov.* pl. 113, fig. 3.

Head and thorax grey-brown, with a purplish bloom; abdomen orange. Fore wing purplish grey-brown, irrorated with fuscous; traces of medial, postmedial, and submarginal lines; green patches at base, middle, and end of cell, two beyond its lower angle with white spots on them, and some on the submarginal line. Hind wing orange, with large black lunule beyond end of cell; a broad black marginal band from costa to vein 2; the cilia chequered black and white.

Hab. Assam; Siam; Singapore; Java. *Exp.* 96 millim.

Genus **CALPE**.

Calpe, *Treitsche, Schmett. Eur.* v, pt. ii, p. 136 (1825).
Calyptra, *Ochs. Schmett. Eur.* iv, p. 78 (1816), præocc.
Oræsia, *Guen. Noct.* ii, p. 362 (1852).
Culasta, *Moore, P. Z. S.* 1881, p. 376.
Hypocalpe, *Butl. P. Z. S.* 1883, p. 157.

Type, *C. capucina*, Esp., from Europe and Japan.

Range. All regions except the Australian.

Palpi porrect, the 2nd and 3rd joints fringed below with very long hair; the frontal tuft large; metathorax with very slight tufts; abdomen with coarse hair on dorsum; tibiæ without spines

and but slightly hairy. Fore wing with the costa slightly arched; the apex acute, the outer margin excurved at vein 3; the inner margin lobed near base and at outer angle.

Larvæ with 3 pairs of abdominal prolegs.

SECT. I. (*Calpe*). Antennæ of male bipectinate, the branches short.

2646. **Calpe ophideroides**, *Guen. Noct.* ii, p. 374; *C. & S.* no. 1221.

Head and thorax red-brown, irrorated with grey; abdomen orange-yellow. Fore wing red-brown suffused with grey, and with numerous fine pale striæ; traces of subbasal, antemedial, and medial lines; black specks at the two angles of cell, a straight rufous line from apex to inner margin just beyond middle. Hind wing orange-yellow. Underside orange-yellow, the outer area of fore wing brownish fuscous.

Hab. N.W. Himalayas; Nepal; Singapore. *Exp.* 70 millim.

2647. **Calpe bicolor**, *Moore, P. Z. S.* 1883, p. 19; *Waterh. Aid,* ii, pl. 150, fig. 4; *C. & S.* no. 1218.

Differs from *ophideroides* in the fore wing being more produced at apex, and with a more silvery sheen; the subbasal, antemedial, and medial lines more distinct; the cilia chestnut. Underside with the outer area of fore wing orange-yellow.

Hab. Kángra. *Exp.* 56 millim.

2648. **Calpe fasciata**, *Moore, Lep. Atk.* p. 151; *C. & S.* no. 1219.

Differs from *bicolor* in being without the reddish tinge; the hind wing and underside brown; the outer angle of fore wing less hooked.

Hab. Simla; Kángra; Sikhim. *Exp.* 54 millim.

2649. **Calpe orthograpta**, *Butl. Ill. Het.* vi, p. 25, pl. 107, fig. 2; *C. & S.* no. 1222.

Differs from *fasciata* in having the 3rd joint of palpi produced to a point. Fore wing darker golden brown; the costa whitish; a whitish spot on the indistinct submarginal line. Hind wing much darker; underside with dark lunule at end of cell and post-medial line.

Hab. Sikhim. *Exp.* 66 millim.

SECT. II. (*Oræsia*). Antennæ of male unipectinate; palpi with the 3rd joint produced to a point; fore wing with the outer margin angled at vein 4.

2650. **Calpe emarginata**, *Fabr. Ent. Syst.* iii, 2, p. 82; *Moore, Lep. Ceyl.* iii, pl. 153, figs. 2, 2 *a* (larva); *C. & S.* no. 1225.
Oræsia alliciens, *Wlk. Cat.* xii, p. 945.
Oræsia tentans, *Wlk. Cat.* xii, p. 945.
Oræsia metallescens, *Guen. Noct.* ii, p. 364.

♂. Head and collar fiery orange; thorax red-brown; abdomen fuscous. Fore wing red-brown suffused with purplish; numerous indistinct slightly waved oblique lines; a dark streak on median nervure; an oblique double line from apex to inner margin beyond middle, filled in with pale near apex; the area beyond it suffused with gold. Hind wing ochreous white, suffused with fuscous towards outer margin.

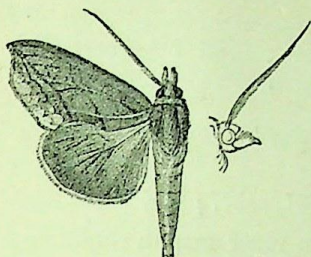



Fig. 318.
Calpe emarginata, ♂. ½.

♀. Fore wing much more variegated; a diffused chocolate patch below middle of cell; a white streak on vein 2; abdomen and hind wing fuscous.

Larva. Dark violet-brown, with a subdorsal series of scarlet and yellow spots, and sublateral series of white dots.

Hab. China; throughout India, Ceylon, and Burma. *Exp.* 42 millim.

2651. **Calpe rectistria,** *Guen. Noct.* ii, p. 363; *C. & S.* no. 1227.

♂. Differs from *emarginata* in the fore wing being considerably longer and more produced at apex; the abdomen, hind wing, and underside much paler.

Hab. Dharmsála; Sikhim; Sylhet. *Exp.* 52 millim.

SECT. III. (*Culasta*). Antennæ of male minutely ciliated.

A. *Fore wing with the outer margin angled.*

2652. **Calpe provocans,** *Wlk. Cat.* xii, p. 943; *C. & S.* no. 1226.
Oræsia argyrosigna, *Moore, Lep. Ceyl.* iii, p. 77, pl. 153, fig. 4; *C. & S.* no. 1224.

♂. Differs from the female of *emarginata* in the palpi being dark; fore wing with a silver streak on vein 2 before the oblique line; a silver streak at apex and line on outer margin below apex.

♀ darker.

Hab. S. Africa; Sylhet; Nilgiris; Ceylon. *Exp.* 48 millim.

B. *Fore wing with the outer margin rounded.*

2653. **Calpe minuticornis,** *Guen. Noct.* ii, p. 374; *Moore, Lep. Ceyl.* iii, pl. 153, figs. 3, 3 *a* (larva); *C. & S.* no. 1220.

Head and thorax pale red-brown, thickly irrorated with grey; abdomen pale fuscous. Fore wing paler red-brown, with a silvery sheen and numerous fine pale striæ; traces of subbasal, antemedial, and medial oblique lines; a rufous line from apex to inner margin beyond middle; a series of submarginal specks. Hind wing pale fuscous; the cilia whitish.

Differs from *capucina* only in the antennæ not being pectinated; a greyer race is found in Manipur.

Larva olive-grey, with a subdorsal series of black-bordered yellow spots, and a sublateral series of specks enclosed from 4th somite by a pinkish-bordered black line; head ochreous, with paired lateral black spots; legs pale pink. Food-plant, *Cocculus macrocarpus.*

Hab. Throughout India and Ceylon; Java. *Exp.* 50 millim.

2654. **Calpe indecisa**, *Moore, P. Z. S.* 1881, p. 377; *C. & S.* no. 1232.

Fore wing with the lobe and hook on inner margin slight and with hardly a trace of the tufts of hair.

Head yellow, irrorated with pink; thorax grey; abdomen pale fuscous. Fore wing grey, with numerous indistinct fuscous specks and oblique lines, the most distinct being two from near apex, the outer with an ochreous streak beyond it; a marginal series of black specks. Hind wing whitish, suffused with fuscous towards outer margin.

Hab. Bombay. *Exp.* 38 millim.

Genus PSEUDOCALPE, nov.

Type, *P. angulifera*, Moore.

Range. S. Africa; Aden; N.W. and W. India; Nilgiris.

Palpi slender and upturned, reaching vertex of head; thorax and abdomen smoothly scaled; tibiæ nearly naked. Fore wing with the costa nearly straight; the apex acute; the outer margin rounded; the inner margin lobed and with tufts of hair near base and at outer angle.

SECT. I. Antennæ of male serrate and fasciculated.

2655. **Pseudocalpe angulifera**, *Moore, P. Z. S.* 1881, p. 373; *C. & S.* no. 1853.

Dabarita icterica, *Swinh. P. Z. S.* 1886, p. 439, pl. 40, fig. 8; *C. & S.* no. 1117.
Anthophila innubila, *Swinh. P. Z. S.* 1886, p. 447; *C. & S.* no. 1885.
Calpe bifasciata, *Hmpsn. Ill. Het.* viii, p. 61.

Fig. 319.
Pseudocalpe angulifera, ♂. ½.

Pale reddish ochreous or brown. Fore wing with numerous dark striæ; an oblique ochreous line from middle of costa to inner margin near base; a postmedial line angled below the costa, then oblique to middle of inner margin. Hind wing semihyaline with an ochreous tinge.

Hab. W. India; Nilgiris. *Exp.* 23–28 millim.

SECT. II. Antennæ of male bipectinate to three fourths length.

2656. **Pseudocalpe vagabunda,** *Swinh. P. Z. S.* 1884, p. 519, pl. 47, fig. 5; *C. & S.* no. 1228.

Brownish ochreous. Fore wing irrorated with dark specks; an indistinct oblique diffused dark medial line; a sinuous ochreous line from outer margin below apex to inner margin beyond middle. Hind wing ochreous white.

Hab. Aden; Karáchi. *Exp.* 30 millim.

Genus ARSACIA.

Arsacia, *Wlk. Cat.* xxxiv, p. 1259 (1865).

Type, *A. saturatalis*, Wlk.

Range. Throughout India, Ceylon, and Burma; Penang; Borneo.

Palpi porrect, the 2nd joint thickly scaled, the 3rd minute and acute; no frontal tuft; antennæ almost simple in male; thorax and abdomen smoothly scaled; the tibiæ naked. Fore wing with the apex quadrate; the outer margin rounded; the inner margin lobed and with slight tufts of hair near base and at outer angle; veins 7, 8, 9, 10 stalked.

2657. **Arsacia saturatalis,** *Wlk. Cat.* xxxiv, p. 1260; *Moore, Lep. Ceyl.* iii, pl. 152, fig. 8; *C. & S.* no. 1231.
Arsacia frontirufa, *Swinh. P. Z. S.* 1885, p. 301, pl. 20, fig. 12; *C. & S.* no. 1230.

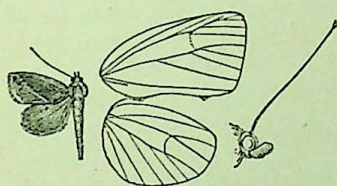



Fig. 320.
Arsacia saturatalis, ♂. ½.

Head and thorax rufous; abdomen fuscous. Fore wing bright chestnut; the costa suffused with pink; an oblique line from the apex to middle of inner margin, the area beyond it suffused with pink and with indistinct submarginal and marginal series of patches of dark scales. Hind wing dark fuscous.

The form *frontirufa* is much darker.

Hab. Punjab; Bombay; Nilgiris; Ceylon; Penang; Borneo. *Exp.* 18 millim.

Genus PLUSIA.

Plusia, *Ochs. Schmett. Eur.* iv, p. 89 (1816).
Euchalcia, *Hübn. Verz.* p. 250 (1818).
Polychrysia, *Hübn. Verz.* p. 251.

Type, *P. chrysitis*, Linn., from Europe.

Range. Universally distributed.

Palpi upturned, the 2nd joint reaching vertex of head, the antennæ of male ciliated; thorax with a very large spreading tuft on the vertex; abdomen with three large dorsal tufts on basal

segments, and lateral and anal tufts more or less strongly developed in male. Fore wing hooked at outer angle.

Larvæ with 2 pairs of abdominal prolegs.

SECT. I. (*Plusia*). Palpi with the 3rd joint short; hind femora of male not tufted with long hair.

2658. **Plusia limbirena**, *Guen. Noct.* ii, p. 350; *Moore, Lep. Ceyl.* iii, pl. 152, fig. 5; *C. & S.* no. 2165.
Plusia confusa, *Moore, Lep. Atk.* p. 149; *C. & S.* no. 2158.
Plusia gamma, *Koll.* (*nec Linn.*) *Hügel's Kaschmir*, iv, p. 481.

Head and thorax clothed with grey and black scales; abdomen pale with the dorsal tufts dark. Fore wing fuscous, with a cupreous tinge; ill-defined darker medial and submarginal patches; the minutely waved double subbasal and antemedial lines with silvery specks on them; the orbicular and reniform small, indistinct, and with pinkish edges; a prominent silver Y-mark below the cell; the minutely waved double postmedial line angled inwards above vein 1; traces of an irregularly sinuous submarginal line; a small pinkish patch on centre of outer margin; a marginal series of black specks. Hind wing pale at base; the outer area suffused with fuscous; cilia pale; underside with indistinct lunule at end of cell and waved postmedial line.

Hab. St. Helena; S. Africa; Madagascar; Aden; N.W. Himalayas; Sikhim; Nilgiris; Ceylon. *Exp.* 42 millim.

2659. **Plusia jessica**, *Butl. A. M. N. H.* (5) i, p. 201, 1878; *id. Ill. Het.* iii, pl. 46, fig. 6.
Plusia serena, *Butl. A. M. N. H.* (5) iv, p. 368, 1879.

Differs from *limbirena* in the head, thorax, and fore wing being much greyer. Fore wing with the lines less waved and more oblique; the stigma a gamma-mark. Hind wing darker fuscous.

Hab. Japan; N.W. Himalayas. *Exp.* 36 millim.

2660. **Plusia furcifera**, *Wlk. Cat.* xii, p. 927; *C. & S.* no. 2177 (part.).
Plusia mutans, *Wlk. Cat.* xxxiii, p. 839; *Hmpsn. Ill. Het.* ix, pl. 162, fig. 5; *C. & S.* no. 2166.

Differs from *limbirena* in the head, thorax, and fore wing being pale brownish with a golden tinge and irrorated with dark brown; the Y-mark much less prominent, its arms narrow and obsolescent; the small patch on the outer margin pale. Hind wing almost uniform fuscous; the cilia pale.

Hab. N.W. Himalayas; Poona; Nilgiris. *Exp.* 36 millim.

2661. **Plusia signata**, *Fabr. Ent. Syst.* iii, 2, p. 81; *C. & S.* no. 2177 (part.).
Plusia diminuta, *Wlk. Cat.* xxxiii, p. 837.

Differs from *limbirena* in the head, thorax, and fore wing being pale reddish brown; abdomen paler, with the dorsal tufts small.

Fore wing with a cupreous tinge; the subbasal, ante- and postmedial lines more prominent and less waved; some black specks beyond the subbasal line; the tail of the Y-mark detached from the arms; the patch and black specks on outer margin absent. Hind wing nearly uniform pale or dark fuscous.

Hab. W. Africa; Ceylon; Java; Fiji. *Exp.* 32 millim.

2662. **Plusia nigriluna**, *Wlk. Cat.* xii, p. 931; *Moore, Lep. Ceyl.* iii, pl. 152, figs. 2, 2 *a* (larva); *C. & S.* no. 2167.

Differs from *signata* in the head and thorax being dark purplish grey, some of the scales of the thoracic tuft orange; abdomen dark fuscous, with pale lateral hairs at base; the dorsal tufts dark. Fore wing dark purplish grey with golden patches near base, on median area, and at outer angle; the Y-mark large and prominent, the arms almost filled in with silver, which has a slight golden tinge; the postmedial line more crenulate; the marginal patch and specks present. Hind wing dark fuscous, with the cilia pale.

Larva olive-green, darkest beneath, with a few fine dorsal hairs; the somites spotted with black. Pupa green, with dorsal segmental brown streaks.

Hab. Sikhim; Ceylon. *Exp.* 32 millim.

2663. **Plusia eriosoma**, *Doubl. Dieffenbach's New Zealand*, ii, p. 285.
Plusia verticillata, *Guen. Noct.* ii, p. 344; *Moore, Lep. Ceyl.* iii, pl. 152, fig. 6; *C. & S.* no. 2180.
Plusia rogationis, *Guen. Noct.* ii, p. 344.
Plusia includens, *Wlk. Cat.* xii, p. 914.
Plusia hamifera, *Wlk. Cat.* xii, p. 917.
Plusia acuta, *Wlk. Cat.* xii, p. 922.
Plusia integra, *Wlk. Cat.* xii, p. 931; *C. & S.* no. 2163.
Plusia adjuncta, *Wlk. Cat.* xxxiii, p. 840.
Plusia dyaus, *Grote, Can. Ent.* vii, p. 202.

Differs from *signata* in the head, thorax, and fore wing having a reddish tinge; abdomen with the lateral and anal tufts often black in the male. Fore wing with much more gilding on the basal, medial, and outer areas; the antemedial line more oblique,

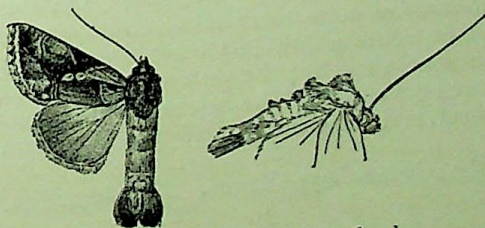



Fig. 321.—*Plusia eriosoma*, ♂. 1/1.

the postmedial more oblique and sinuous; the Y-mark large, prominent, and golden, the arms often filled in with golden and occasionally joined to the tail.

Some specimens are much darker than others.

Larva green, the back palest, with indistinct dorsal and lateral pale lines. Food-plant, *Ficus*.

Hab. N. and S. America; Wadelai; Aden; Japan; China; throughout the Indian, Malayan, and Australasian regions. *Exp.* 42 millim.

2664. **Plusia nigrisigna**, *Wlk. Cat.* xii, p. 928; *Butl. Ill. Het.* vi, pl. 110, fig. 4; *C. & S.* no. 2168.

Differs from *eriosoma* in the lower arm of the Y-mark being nearly straight and almost touching the antemedial line; a small bright chestnut patch beyond the end of its tail; a sinuous golden mark on outer edge of reniform, with three black specks in its undulations.

Some specimens are darker than others.

Hab. N.W. Provinces; the Himalayas from Simla to Sikhim. *Exp.* 40 millim.

2665. **Plusia ni**, *Hübn. Noct.* pl. 58, fig. 284.
Plusia humilis, *Wlk. Cat.* xii, p. 915.
Plusia extrahens, *Wlk. Cat.* xii, p. 929; *C. & S.* no. 2161.
Plusia significans, *Wlk. Cat.* xii, p. 930; *C. & S.* no. 2178.

Differs from *eriosoma* in the head and thorax being mingled grey and ferruginous; abdomen ochreous white, with the dorsal tufts ferruginous. Fore wing grey, without gilded areas; the subbasal, ante- and postmedial lines ferruginous and more waved; the orbicular and reniform ferruginous; the Y-mark more slender, with rufous centre; the submarginal line more prominent and dentate. Hind wing pale fuscous; the base pale; the cilia whitish.

Hab. San Domingo; Europe; St. Vincent (Cape Verds); Aden; Japan; China; N.W. India. *Exp.* 38 millim.

2666. **Plusia purpureofusa**, n. sp.

Differs from *nigrisigna* in the head, thorax, and fore wing being suffused with purple. Fore wing with the lines red-brown; the antemedial line angled just below the costa; the stigma either small with the arms separate from the tail, or large and conjoined; the mark on discocellulars with its outer edge slightly indented and the black specks minute; the postmedial line double, angled below costa, and not curved. The rufous mark beyond the tail of Y may be absent, and the golden suffusion on inner area and near apex slight.

Hab. Sikhim; Bernardmyo, Burma. *Exp.* 40 millim. Type in coll. Elwes.

2667. **Plusia obtusisigna**, *Wlk. Cat.* xii, p. 930; *Moore, Lep. Ceyl.* iii, pl. 152, fig. 1, 1 *a* (larva); *C. & S.* no. 2169.

Differs from *nigrisigna* in the head, thorax, and fore wing being

whitish grey, the last with gilded patches above the Y-mark, which is white, with the tail joined to the arms, and on the submarginal line; an irregular black basal mark below median nervure; no sinuous black-speckled mark on outer edge of reniform.

The Burmese specimen is large, with the tail of the Y-mark separate from the arms.

Larva green with white dorsal lines, subdorsal streaks, and lateral dots; black dots on 4th to anal somites; medial prolegs pale red.

Hab. Poona; Nilgiris; Ceylon; Burma. *Exp.* 32–40 millim.

2668. **Plusia gutta**, *Guen. Noct.* ii, p. 346.
Plusia albostriata, *Brem. Beitr. Nord. Chin.* p. 18, no. 97.
Plusia argyrosigna, *Moore, Lep. Atk.* p. 149; *C. & S.* no. 2154.

Differs from *eriosoma* in the head, thorax, and fore wing being purplish grey, the last with the medial area below the cell suffused with reddish brown; the antemedial line more silvery; the silvery Y-mark very large and filled in with silver, the arms joined to the tail; some silvery specks at angle of cell; the postmedial line straighter. Hind wing paler.

In the Nilgiri specimen the Y-mark is narrow, the specks at end of cell larger.

Hab. Europe; Japan; China; Dharmsála; Nilgiris. *Exp.* 38 millim.

2669. **Plusia circumflexa**, *Linn. Syst. Nat.* i, 2, p. 844; *C. & S.* no. 2157.
Plusia patefacta, *Wlk. Cat.* xii, p. 924; *Hmpsn. Ill. Het.* viii, pl. 149, fig. 1.

Head and thorax clothed with grey and brown hairs; abdomen brownish fuscous. Fore wing grey, clouded in parts with coppery fuscous; a waved silvery subbasal line; the antemedial line straight and oblique, obsolete from the costa to median nervure, where it is joined by the lower arm of the V-mark, which has no tail to it and is surrounded by some dark brown; the postmedial line oblique and almost straight, dentate below vein 2; the irregularly sinuous submarginal line black, with two indentations between the median nervules; fine marginal and cilial lines. Hind wing fuscous, the basal area palest, the cilia whitish; underside with cell-spot and postmedial line.

Hab. Europe; Teneriffe; S. Africa; Nilgiris. *Exp.* 40 millim.

2670. **Plusia permissa**, *Wlk. Cat.* xv, p. 1786; *C. & S.* no. 2173.

♂. Differs from *circumflexa* in the head, thorax, and abdomen being red-brown; the anal tuft blackish. Fore wing much suffused with coppery red-brown; the ante- and postmedial lines more sinuous, the latter angled inwards below vein 2; the submarginal line obscured by the coppery patches. Hind wing reddish fuscous.

Hab. Canara. *Exp.* 36 millim.

2671. **Plusia daubei**, *Boisd. Ind. Méth.* p. 159; *C. & S.* no. 2159.
Plusia ciliaris, *Wlk. Cat.* xii, p. 928; *Butl. Ill. Het.* vi, pl. 110, fig. 5; *C. & S.* no. 2156.
Plusia indicator, *Wlk. Cat.* xii, p. 922.

Differs from *circumflexa* in being paler grey without the purplish tinge, and suffused with pale golden brown. Fore wing with the veins whitish; the ante- and postmedial lines more erect; the orbicular and reniform with white edges; the V-mark more elongate and separate from the antemedial line.

The male has the lateral tufts on abdomen fulvous.

Hab. Europe; Senegal; Congo; Himalayas as far east as Sikhim. *Exp.* 34 millim.

2672. **Plusia lobifera**, *Moore, P. Z. S.* 1881, p. 358; *C. & S.* no. 1822.

♂. Head, thorax, and abdomen pale brownish fuscous, the vertex of head white. Fore wing brownish white; the costal and central inner areas and the area beyond the cell fuscous-grey; a double waved antemedial line, indistinct except towards inner margin; an elongate claviform spot with black outline; an indistinct lunule on discocellulars; a double sinuous postmedial line, incurved below cell; series of black submarginal streaks and marginal specks; the cilia fuscous intersected with white. Hind wing fuscous, with the cilia white.

Hab. Bombay. *Exp.* 34 millim.

2673. **Plusia pyropia**, *Butl. A. M. N. H.* (5) iv, p. 367.

Head orange-red; thorax red-brown, the tips of the scales white; abdomen pale brown, the dorsal tufts rufous. Fore wing grey-brown; the medial area below the cell and the whole outer area except the anal angle suffused with golden copper; the ante- and postmedial lines nearly straight, the former obsolete above median nervure; the upper part of the stigma 'crochet'-shaped and not joined to the round spot; an irregularly waved submarginal line. Hind wing brownish fuscous.

Hab. Japan; Dharmsála; Sikhim; Nágas. *Exp.* 34 millim.

2674. **Plusia ornatissima**, *Wlk. Cat.* xv, p. 1786; *C. & S.* no. 2171.
Plusia chalsytis, *Köll.* (*nec Treit.*) *Hügel's Kaschmir*, iv, p. 482.

Differs from *pyropia* in the metallic markings being more brassy, those near outer margin less diffused; the costal portion of the subbasal line silvery; the antemedial line angled below median nervure; the two portions of the Y-mark very large, prominent and silvery; a golden speck on each side of the orbicular and reniform; the postmedial line more erect. Hind wing dark fuscous.

Hab. Japan; China; N.W. Himalayas; Sikhim. *Exp.* 40 millim.

2675. **Plusia pannosa**, *Moore, Lep. Atk.* p. 149; *C. & S.* no. 2172.

Differs from *pyropia* in the ground-colour being paler. Fore wing with the inner area beyond the antemedial line and the outer area dark golden copper-colour, leaving a marginal line and triangular patch of the ground-colour at outer angle; white-ringed black specks in cell and at its lower angle; the stigma small, its arms not filled in with white.

Hab. Sikhim. *Exp.* 34 millim.

2676. **Plusia ochreata**, *Wlk. Cat.* xxxiii, p. 839; *Moore, Lep. Ceyl.* iii, pl. 151, fig. 4; *C. & S.* no. 2170.

Differs from *pyropia* in the thorax being more suffused with fiery orange. Fore wing with the copper colour confined to the apical part of outer area; the stigma consisting of a fuscous and white streak from the costa at the antemedial line to the postmedial line at vein 2, these being almost erect and the latter sinuous.

Hab. Hongkong; Formosa; Simla; Nágas; Nilgiris; Ceylon. *Exp.* 30 millim.

2677. **Plusia impulsa**, *Wlk. Cat.* xxxiii, p. 838; *Hmpsn. Ill. Het.* ix, pl. 162, fig. 11; *C. & S.* no. 2162.

Head and thorax fiery orange; abdomen pale. Fore wing rosy grey, with brilliant coppery red patches at end of cell, on inner medial area, and at apex; the antemedial line oblique and silvery; the Y-mark small, with the tail disconnected from the arms; some slight silvery marks at end of cell; the postmedial line evenly curved; the submarginal line slightly sinuous. Hind wing pale fuscous.

Hab. Travancore; Ceylon. *Exp.* 30 millim.

2678. **Plusia orichalcea**, *Fabr. Sp. Ins.* ii, p. 227; *Moore, Lep. Ceyl.* iii, pl. 152, fig. 7; *C. & S.* no. 2155.
Phalæna chrysitina, *Martyn, Psyche*, pl. 21.
Noctua chryson, *Esp. Schmett.* iv, pl. 141, fig. 2.
Phalæna ærifera, *Sowerby, Brit. Misc.* pl. 29.
Noctua aurifera, *Hübn. Eur. Schmett.* pt. 98, fig. 463.

Head, collar, and vertex of thorax reddish orange; tegulæ and fore wing pale red-brown; the last with the subbasal, ante- and postmedial waved lines very indistinct, fine, and white; the submarginal line irregularly lunulate; the orbicular and reniform with fine white outlines; the whole of the outer area, except the inner margin, occupied by a brassy golden patch which extends towards the base below median nervure, further in *chrysitina* than in the typical form. Hind wing pale at base, the outer area fuscous.

Larva. Bluish green, with a few short dorsal hairs; slender dorsal white lines and a prominent lateral line. Food-plant, *Coreopsis*.

Hab. Azores; Madeira; Canaries; St. Helena; Ascension; S. Africa; Mauritius; Arabia; Japan; China; Formosa; throughout India and Ceylon. *Exp.* 44 millim.

2679. **Plusia hebetata,** *Butl. Ill. Het.* vii, p. 71, pl. 131, fig. 1.

Head, thorax, and fore wing pinkish; the last with diffused brown subbasal, antemedial, and medial bands; the postmedial line almost straight; the irregularly dentate submarginal line with a coppery patch beyond it. Abdomen and hind wing brownish fuscous.

Hab. Japan; Kulu. *Exp.* 44 millim.

2680. **Plusia agramma,** *Guen. Noct.* ii, p. 327; *Moore, Lep. Ceyl.* iii, pl. 152, fig. 3, 3 *a* (larva); *C. & S.* no. 2153.
Plusia inchoata, *Wlk. Cat.* xxxiii, p. 841.

Differs from *hebetata* in being grey-brown without the rosy tinge. Fore wing with the patches bronze instead of coppery, the postmedial line sinuous.

Larva green, with lateral black spots; some short black pointed spines on the back, stoutest on the 4th, 5th, 6th, 7th, and 11th somites; a prominent white subdorsal and lateral waved line. Food-plants, *Cucurbitaceæ.*

Hab. Japan; Sikhim; Bombay; Canara; Ceylon; Java; Australia. *Exp.* 40 millim.

2681. **Plusia fracta,** *Wlk. Cat.* xii, p. 920.
Plusia placida, *Moore, Lep. Ceyl.* iii, p. 73, pl. 151, fig. 10; *C. & S.* no. 2174.

Head, thorax, and fore wing brownish grey, in the darker specimens olive-grey. Fore wing with the ante- and postmedial lines straight and oblique, the former obsolete above median nervure, the area between them below the cell bronzy; the submarginal line slightly sinuous; an almost marginal bronzy straight line. Abdomen and hind wing fuscous.

Hab. Abyssinia; Congo; N. India; Nilgiris; Ceylon. *Exp.* 38–42 millim.

2682. **Plusia tetragona,** *Wlk. Cat.* xii, p. 932; *C. & S.* no. 2179.
Plusia semivitta, *Moore, P. Z. S.* 1867, p. 63, pl. 6, fig. 13; *C. & S.* no. 2176.
Plusia purissima, *Butl. Ill. Het.* ii, p. 35, pl. xxxi, fig. 11.

Differs from *fracta* in the head, thorax, and fore wing being whitish grey, the last with the markings fuscous instead of bronzy; a silvery Y-mark with the arms small.

In Himalayan typical forms the antemedial line is prominent from the costa to median nervure, obsolete in the Japanese form, which also has the tail of the Y-mark separated from the arms, and a dark mark at lower angle of cell.

Hab. Japan; Dharmsála; Kulu. *Exp.* 40 millim.

2683. **Plusia modesta**, *Hübn. Beitr.* i, p. 1, pl. i, fig. 1 A.
Noctua illustris, *Fabr. Mant. Ins.* p. 164.
Plusia illustris, var. uralensis, *Ev. Bull. Mosc.* xv, 1842, p. 553.
Euchalcia cashmirensis, *Moore, P. Z. S.* 1881, p. 376; *C. & S.* no. 2186.

Grey; the head, collar, and tegulæ tinged with pale fulvous; abdomen grey, with the dorsal tufts fulvous. Fore wing grey, typically with a rosy tinge, in the Himalayan form *cashmirensis* greenish; cupreous fulvous patches on costa, medial area below vein 2, and near outer angle; the subbasal line indistinct; the pale double ante- and postmedial lines almost straight; the pale submarginal line slightly sinuous; orbicular and reniform with slight pale edges; a white U-mark below the cell; slight cupreous patches on outer margin at apex and centre; a pale marginal line. Hind wing fuscous; darker in *cashmirensis*. Underside ochreous; the disk of fore wing fuscous.

Hab. Europe; Kulu; Kashmir. *Exp.* 36–40 millim.

2684. **Plusia oxygramma**, *Hübn. Zutr.* p. 37, figs. 769, 770.
Abrostola transfixa, *Wlk. Cat.* xii, p. 884; *C. & S.* no. 2185.
Plusia subchalybæa, *Wlk. Cat.* xxxiii, p. 833.
Abrostola nubila, *Moore, Lep. Ceyl.* iii, p. 549.

Head, thorax, and fore wing dull brown with a grey tinge; the subbasal, ante- and postmedial waved lines brownish and indistinct; the orbicular narrow, elongate, and brown, with white edges; a white streak on median nervure conjoined to a brown streak with pale edges on vein 2, terminating at the postmedial line; a dark dentate submarginal line. Hind wing fuscous, pale at base.

The form *subchalybæa* differs in the orbicular not being brown, and in having some dark suffusion on vein 2 instead of the brown pale-edged streak.

Hab. Georgia (Asia); Japan; China; N.W. Himalayas; Nilgiris; Ceylon; Java; Australia; Fiji. *Exp.* 42 millim.

2685. **Plusia anargyra**, *Guen. Noct.* ii, p. 351.
Plusia spoliata, *Wlk. Cat.* xii, p. 923; *Hmpsn. Ill. Het.* viii, pl. 149, fig. 7.
Plusia reticulata, *Moore, Lep. Atk.* p. 148; *C. & S.* no. 2175.

Head and thorax red-brown, with white tips to the scales; abdomen pale brown. Fore wing brown, with a purplish tinge and golden suffusion towards outer margin; the markings slight, indistinct, and formed of golden scales; the subbasal, ante- and postmedial lines sinuous; the orbicular and reniform small; an elongate V-mark on vein 2; an irregularly dentate submarginal, and more regular and prominent marginal line. Hind wing brown; underside pale, with cell-spot and postmedial line, beyond which is some fuscous suffusion.

Hab. Congo; Madagascar; Sikhim; Nilgiris. *Exp.* 36 millim.

2686. **Plusia lectula**, *Wlk. Cat.* xv, p. 1679; *Moore, Lep. Ceyl.* iii, pl. 146, fig. 2; *C. & S.* no. 2164.
Plusia kalitura, *Feld. Reis. Nov.* pl. 110, fig. 24.

Head and thorax dark red-brown and grey; abdomen pale. Fore wing dark red-brown and purplish grey; an antemedial rufous line; a broad white streak along median nervure and vein 2 as far as the postmedial line, which is bent outwards at vein 5, a large red-brown patch above the streak; reniform grey with white lines on its inner and outer edges; some red-brown submarginal dentate marks, with a white streak below those near apex; a rufous submarginal line; two fine marginal lines and a white line through the cilia. Hind wing pale fuscous.
Hab. Bengal; Canara; Ceylon. *Exp.* 28 millim.

SECT. II. Male with the hind femora heavily tufted with hair.

2687. **Plusia æneofusa**, *Swinh. MS.*

♂. Head, collar, and vertex of thorax orange-fulvous; tegulæ and abdomen brown, the last with parts of the anal tuft pale. Fore wing purplish grey, with the medial area below the cell brassy gold and patches on the outer area below the apex and at outer angle; the subbasal, antemedial, medial, and postmedial lines nearly straight; the orbicular and reniform very indistinct; an irregularly sinuous submarginal line. Hind wing brown.
Hab. Sikhim; Khásis. *Exp.* 40 millim. Type in B. M.

SECT. III. (*Polychrysia*). Palpi with the 3rd joint long and clothed with long hair to near apex.

2688. **Plusia crassipalpus**, *Swinh. MS.*

Head and thorax dark brown with a pink tinge; the tufts on metathorax fulvous; abdomen fuscous, with the dorsal tufts red-brown. Fore wing brown suffused with pink; a basal triangular dark mark with silver specks on its edges; a curved double antemedial line; a silvery **Y**-mark with its tail detached from the arms; a silvery speck at lower angle of cell; a dark bar beyond cell; a double waved postmedial line; an irregularly sinuous submarginal line; the outer edge of the antemedial line below cell, the areas below end of cell and before submarginal line cupreous. Hind wing pale at base, fuscous towards outer margin, Underside of fore wing fuscous, the outer margin pale; hind wing pale, with broad postmedial fuscous band.
The Java specimen is much paler, without pink suffusion on fore wing and thorax.
Hab. Khásis; Java. *Exp.* 38–42 millim. Type in B. M.

Genus ABROSTOLA.

Abrostola, *Ochs. Schmett. Eur.* iv, p. 88 (1816).

Type, *A. triplasia*, Linn., from Europe.

Range. Nearctic and Palæarctic regions; S. Africa; Japan; Sikhim.

Differs from *Plusia* in having raised tufts of scales on the fore wing and the outer angle not hooked.

2689. **Abrostola anophioides,** *Moore, Lep. Atk.* p. 148; *C. & S.* no. 2184.

Fuscous brown. Abdomen of male with dense lateral tufts of hair. Fore wing with the basal and outer areas slightly paler; slightly waved ante- and postmedial lines, the former with red-brown on its inner edge, the latter on its outer; the orbicular, reniform, and a mark below the cell large and indistinct, with narrow outlines of raised black scales; an indistinct pale waved submarginal line and black marginal line. Hind wing with the basal area palest; an indistinct postmedial line; the underside suffused with grey, with a cell-spot and waved postmedial line.

Fig. 322.
Abrostola anophioides, ♂. 1/1.

Hab. Sikhim. *Exp.* 48 millim.

Genus PLUSIODONTA.

Plusiodonta, *Guen. Noct.* ii, p. 359 (1852).
Deva, *Wlk. Cat.* xii, p. 962 (1857).

Type, *P. compressipalpis*, Guen., from N. America.

Range. U. States; W. Indies; S. Africa; Madagascar; Japan; China; throughout India, Ceylon, and Burma; Andamans; Java; Australia.

Palpi upturned, the second joint roughly scaled and reaching the vertex of head or above it; thorax and abdomen slender, without tufts. Fore wing with the apex somewhat acute; the outer margin more or less angled at vein 4; the inner margin with tufts of scales at centre and outer angle, the margin being excised between them. Legs smoothly scaled.

The typical section has the antennæ bipectinated in the male.

Larvæ with two pairs of abdominal prolegs.

SECT. II. (*Deva.*) Male with the antennæ minutely ciliated.

2690. **Plusiodonta cœlonota,** *Koll. Hügel's Kaschmir*, iv, p. 482.
Plusiodonta chalsytoides, *Guen. Noct.* ii, p. 360; *Moore, Lep. Ceyl.* iii, pl. 153, figs. 1, 1 *a* (larva); *C. & S.* no. 2182.
Deva conducens, *Wlk. Cat.* xii, 963.

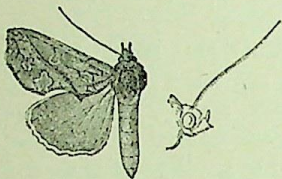
Plusia agens, *Feld. Reis. Nov.* pl. 110, fig. 32.
Plusiodonta auripicta, *Moore, Lep. Atk.* p. 150; *C. & S.* no. 2181.

Head and collar rufous; thorax and abdomen grey-brown. Fore wing red-brown suffused with golden bronze and more or less irrorated with blue-grey scales; indistinct antemedial and medial waved lines; an oblique double sinuous postmedial line angled below the costa; the orbicular and reniform indistinct; a very irregularly sinuous submarginal golden band with dark edges, interrupted at vein 3. Hind wing dark fuscous; the cilia pale.

Fig. 323.
Plusiodonta cœlonota, ♂. ½.

The form *auripicta* is rather darker and more marked with blue-grey.

Larva purplish black with grey specks and streaks; the 7th and 11th somites with pinkish patches; head reddish.

Hab. Throughout India, Ceylon, and Burma; Andamans; Java. *Exp.* 32–36 millim.

Genus TINOLIUS.

Tinolius, *Wlk. Cat.* iii, p. 621 (1855).

Type, *T. eburneigutta*, Wlk.

Range. Sikhim; throughout continental India, Ceylon, and Burma; Andamans; Cambodia.

Palpi obliquely porrect and hairy; antennæ bipectinated in

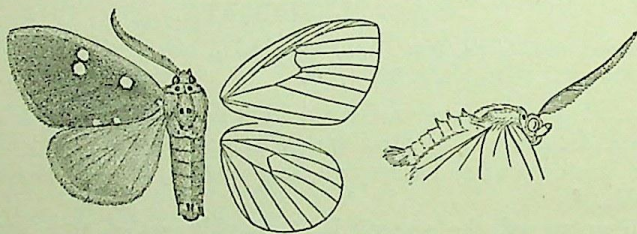



Fig. 324.—*Tinolius eburneigutta*, ♂. ½.

male, ciliated in female; thorax without tufts; abdomen with dorsal tufts. Fore wing with vein 10 from beyond the end of areole.

Larvæ with two pairs of abdominal prolegs.

2691. **Tinolius eburneigutta**, *Wlk. Cat.* iii, p. 621; *Moore, Lep. Ceyl.* iii, pl. 171, figs. 10, 10 *a* (larva); *C. & S.* no. 773.

Head, thorax, and abdomen crimson; collar, meso- and metathorax with paired white-edged black spots; abdomen with segmental lateral black bands. Fore wing bright red-brown; a white speck at base; a round white spot at middle of cell and two at end of it two or three white marks on centre of inner margin;

costa and cilia crimson. Hind wing and underside crimson. Legs crimson, spotted with black.

Larva (p. 428) purplish black, with yellow transverse lines and spots to the somites; 4th, 5th, and 6th somites with long black spatulate dorsal filaments; the head spotted and streaked with yellow. Pupa dark red-brown marked with golden yellow.

Hab. Sikhim; Sylhet; throughout peninsular India and Ceylon; Burma; Andamans. *Exp.*, ♂ 46, ♀ 58 millim.

2692. **Tinolius quadrimaculatus**, *Wlk. Cat.* xxxi, p. 281.
Tinolius zingha, *Swinh. Trans. Ent. Soc.* 1890, p. 185, pl. vi, fig. 12.

♂. Differs from *eburneigutta* in the white spot at upper angle of cell of fore wing being small or obsolete; the hind wing with the base and inner margin crimson, the remainder fuscous brown.

Hab. Sikhim; Moulmein; Beeling; Cambodia. *Exp.* 52–60 millim.

2693. **Tinolius hypsana**, *Swinh. P. Z. S.* 1889, p. 405.

♂. Differs from *eburneigutta* in the ground-colour of the head, thorax, and abdomen being orange, of the fore wing fawn-colour, of the hind wing whitish.

Hab. Sikhim; Khásis. *Exp.* 72 millim.

Genus CALESIA.

Calesia, *Guen. Noct.* iii, p. 257 (1852).
Pasipeda, *Wlk. Cat.* xv, p. 1794 (1858).
Mecyra, *Wlk. Cat.* xxxiii, p. 979 (1865).
Carandana, *Moore, Lep. Ceyl.* iii. p. 45 (1885).

Type, *C. dasyptera*, Koll.

Range. Kilimanjaro; China; throughout India, Ceylon, and Burma; Java; Philippines; Taboga.

Palpi upturned and smoothly scaled, the 2nd joint reaching vertex of head, the 3rd long and naked; antennæ ciliated and with bristles to the joints in male. Thorax, abdomen, and legs smoothly scaled. Hind wing with the cell very short.

Larvæ with two pairs of abdominal prolegs.

SECT. I. (*Pasipeda*). Fore wing with no tuft of hair in male; veins 8 and 9 anastomosing to form an areole.

A. *Antennæ of male without a tuft of hair at middle.*

2694. **Calesia hæmorrhoa**, *Guen. Noct.* iii, p. 258; *C. & S.* no. 2638.
Calesia patna, *Feld. Reis. Nov.* pl. 117, fig. 17.

Varies in colour from dark red-brown to dark fuscous; palpi scarlet; abdomen scarlet except at base; coxæ of fore legs and tibiæ scarlet. Fore wing with a slight grey speck on the discocellulars; a very indistinct postmedial line bent inwards below the cell; a

waved submarginal line. Hind wing with indistinct medial and postmedial lines.

Hab. India, Ceylon, and Burma. *Exp.* 46 millim.

2695. **Calesia rufipalpis,** *Wlk. Cat.* xv, p. 1795; *C. & S.* no. 2639.

Differs from *hæmorrhoa* in the abdomen being only slightly suffused with crimson; the anal tuft fulvous; the legs brown; the head, thorax, and wings very dark red-brown; the last with a few scattered pale scales and a white spot at end of cell of fore wing; the cilia whitish at tips.

Hab. Travancore; Ceylon. *Exp.* 44 millim.

2696. **Calesia phæosoma,** *Hmpsn. Ill. Het.* viii, p. 90, pl. 147, fig. 2.

Differs from *rufipalpis* in being fuscous brown; the abdomen without any red; the cilia not white-tipped.

Hab. Nilgiris. *Exp.* 42 millim.

2697. **Calesia satellitia,** *Moore, Lep. Ceyl.* iii, p. 184, pl. 171, figs. 6, 6 *a* (larva); *C. & S.* no. 2640.

Head, collar, coxæ of fore legs, and tibiæ fulvous, the tibiæ with a terminal black spot; thorax and base of abdomen fuscous brown, the remainder of abdomen crimson above. Wings fuscous brown; fore wing with a large white spot at end of cell and a submarginal irregular series of smaller spots.

Larva dark purplish brown; some short dark hairs on anterior and posterior somites; some yellow transverse stripes on the segments, each of which has a pair of divergent dorsal spots; some lateral spots and streaks; head and legs yellow-spotted.

Hab. W. and S. India; Ceylon. *Exp.* 44 millim.

B. *Antennæ of male thickened, with a large tuft of long hair before middle.*

2698. **Calesia roseiceps,** n. sp.

♂. Head, collar, and abdomen bright crimson; thorax and wings uniform grey-brown.

Hab. Sikhim, 3000 feet (*Möller*). *Exp.* 50 millim. Type in coll. Elwes.

SECT. II. Fore wing with a very large tuft of hair beyond the cell below the costa in male, and the costal nervules curved.

A. (Calesia). *Fore wing with veins* 8, 9, 10 *stalked in both sexes.*

2699. **Calesia dasyptera,** *Koll. Hügel's Kaschmir,* iv, p. 476; *C. & S.* no. 2642.

Erebus leucostigma, *Koll. Hügel's Kaschmir,* iv, p. 476; *Moore, Lep. Ceyl.* iii, pl. 171, fig. 5.
Calesia comosa, *Guen. Noct.* iii, p. 258, pl. 21, fig. 7.
Calesia stigmoleuca, *Guen. Noct.* iii, p. 258.

♂. Greyish red-brown; the head, collar, and abdomen crimson; coxæ of fore legs and tibiæ of fore and mid legs crimson.

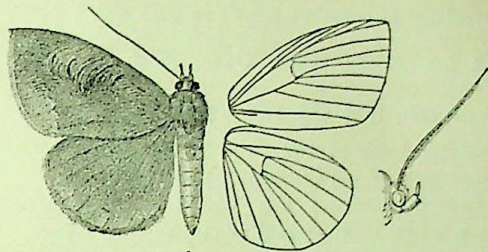



Fig. 325.—*Calesia dasyptera*, ♂. ½.

♀ with a white spot at end of cell of fore wing.

Hab. China; throughout India, Ceylon, and Burma. *Exp.*, ♂ 50, ♀ 40 millim.

B. *Male with veins* 8, 9, 10 *of fore wing stalked; female with veins* 8 *and* 9 *anastomosing to form an areole.*

2700. **Calesia fuscicorpus**, *Hmpsn. Ill. Het.* viii, p. 90, pl. 147, figs. 8, 9.

Differs from *dasyptera* in being greyer; the abdomen not crimson.

Hab. Nilgiris; Travancore; Ceylon. *Exp.*, ♂ 50, ♀ 40 millim.

C. *Male with vein* 5 *of the fore wing from upper angle of cell; veins* 8, 9, 10 *stalked; female with vein* 5 *from lower angle of cell; veins* 7, 8, 9, 10 *stalked.*

2701. **Calesia flabellifera**, *Moore, P. Z. S.* 1878, p. 849; *Hmpsn. Ill. Het.* ix, pl. 165, figs. 2, 8; *C. & S.* no. 2643.

Differs from *dasyptera* in the antennæ being white; the colour bright red-brown; the wings irrorated with white scales; fore wing with indistinct medial and waved submarginal line. Hind wing with the cilia white-tipped.

Hab. Ceylon; Tenasserim. *Exp.*, ♂ 48, ♀ 40 millim.

D. (Carandana). *Male with veins* 8 *and* 9 *of fore wing anastomosing to form an areole.*

2702. **Calesia fasciculosa**, *Wlk. Cat.* xv, p. 1760; *Hmpsn. Ill. Het.* ix, pl. 165, fig. 11; *C. & S.* no. 1852.
Calesia cirrus, *Feld. Reis. Nov.* pl. 108, fig. 44.

♂ pure white; tibiæ spotted with black. Fore wing with the outer half suffused with pale fulvous; a black subapical spot beyond the tuft; three black specks on the costa.

Hab. Travancore; Ceylon; Java; Philippines. *Exp.* 36 millim.

E. (Mecyra). *Male with the fore wing shorter than the hind wing; the inner margin much lobed and forming a continuous curve with the outer margin; the apex somewhat acute; veins 8 and 9 anastomosing to form an areole in both sexes.*

2703. **Calesia gastropachoides**, *Guen. Noct.* iii, p. 258; *C. & S.* no. 2644.

Mecyra invaria, *Wlk. Cat.* xxxiii. p. 980.

♂. Pale reddish brown; the palpi and anal tuft with a fulvous tinge. Fore wing with an indistinct postmedial line.

♀ more fuscous brown; the wings slightly irrorated with white scales; a white spot at end of cell of fore wing.

Hab. Bengal; Upper Tenasserim; Java. *Exp.*, ♂ 44, ♀ 40 millim.

ALPHABETICAL INDEX.

PRINTED BY TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET

UNIFORM WITH THE PRESENT VOLUME.

THE FAUNA OF BRITISH INDIA,

INCLUDING CEYLON AND BURMA.

Published under the authority of the Secretary of State for India in Council.

EDITED BY

W. T. BLANFORD.

Cloth, med. 8vo, with numerous woodcuts. *Price* £1.

MAMMALIA.

BY

W. T. BLANFORD, F.R.S.

Cloth, med. 8vo, with numerous woodcuts. *Price* £1 *each.*

FISHES.—2 VOLS.

BY

FRANCIS DAY, C.I.E., LL.D., &c.

Cloth, med. 8vo, numerous woodcuts. *Vol.* I. £1; *Vol.* II. 15*s.*

BIRDS.—VOLS. I. AND II.

BY

E. W. OATES, F.Z.S.

Cloth, med. 8vo, with numerous woodcuts. *Price* £1.

REPTILIA AND BATRACHIA.

BY

G. A. BOULENGER.

Cloth, med. 8vo, with numerous woodcuts. *Price* £1.

MOTHS.—VOL. I.

BY

G. F. HAMPSON.

LONDON:
TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET.

CALCUTTA:
THACKER, SPINK, & CO.

BOMBAY:
THACKER & CO., LIMITED.

BERLIN:
R. FRIEDLÄNDER UND SOHN, 11 CARLSTRASSE.

12